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Railway Age

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Railway Age

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In This Issue

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RAILWAY AGE

Can Unions Afford To Countenance "Rackets"?

It has been with a real sense of satisfaction that we have been able in recent issues to report and comment favorably upon what appears to be the development of a more responsible and enlightened attitude on the part of the railway labor organizations. The railway industry has so many enemies without the gates that it is indeed a pity that it has to suffer at all from any elements within which tend to sap its strength and endanger the ability of those dependent on its earnings to stand together as a unit in meeting the onslaughts of the common foe. The development of a sense of responsibility for the prosperity of the industry on the part of some of the leaders of the organized employees, as shown in their apparently increasing reliance upon collective bargaining rather than political manoeuvering, and in their splendid support of the Pettengill bill to repeal the long-and-short haul clause of the Interstate Commerce Act, has thus been a source of satisfaction to everyone who wishes to see a fair share of the future traffic of the country on rails, rather than most of it on rubber or water.

The "Make-Work" Racket

But the enlightenment shown by the rail unions is not universal or uniform—and some of them are continuing with tactics that are nothing but "rackets" which prey not alone upon railway owners but upon other railway employees. "Make work" legislation favoring one class of employees obviously reduces the funds available for hiring other classes of employees. An "extra" crew or train limit law simply means that train crews—already enjoying tremendous advantages in both wages and hours over other employees—will get money which might otherwise be used for the employment of other workers, principally those in the maintenance departments. Moreover, such legislation decreases the railways' ability to continue in operation "border line" trains, which barely pay expenses; and probably ultimately harms even the classes of employees whom it is designed to benefit. It is exactly of a piece with the "shake down" rackets conducted by metropolitan "mobs," where toll is levied on commerce in return for no commensurate service. The only distinction is that the urban "mob" conducts its hold-up with guns, while the "full" crew and train limit bills are enacted by a display of voting strength. The pity of it is that the overwhelming majority of decent-minded men in the ranks of railroad labor abhor this kind of racketeering, but are no more organized to stop it than are the victims of some urban mobsters' "trade associations" or "unions."

The Adjustment Board and the "Back Pay" Racket

For many years the railroad industry has been the prey of the "reparations racket." Traffic "experts" of a legalistic, ambulance-chasing mentality proffer their services to shippers, playing upon their cupidity for opportunity to examine their freight bills with the hope of turning up some technicality enabling a claim for "reparations" to be filed—a shyster lawyer practice if ever there was one. Now we note with profound regret one of the old and respected railway unions resorting to substantially the same methods, a "back pay" racket having developed out of Adjustment Board cases which is practically analogous to that in connection with reparations. We quote (omitting names of occupations) from a circular distributed by this labor organization among its members:

> Back pay adjustments—one railroad—employees in our occupation, approximately $122,000. One employee received more than $5,000.
>
> On another railroad employees in our occupation received $66,328.11. The highest check to a single employee was $2,532.54.

The circular goes on to invite inquiries from members who would like to know "of a way you might get a little extra money without costing you a cent." Without examining in detail the degree of "neutrality" of men who have been called in to settle cases before the Adjustment Board, or in any way impugning their integrity, nevertheless some decisions that some of them have been handing down are making disputes rather

than settling them, and are definitely encouraging litigation based, not on justice, but on legal technicalities.

A Day's Pay for 15 Minutes' Work

For example, consider this case: A railroad changed its operating practice to require passenger crews to take their trains to the yard after runs had been completed. The road had other agreements which provided yard pay for such an operation, with a minimum payment for an hour's time. This case went to the Adjustment Board and a "neutral" decided that the men were entitled to an extra day's back pay for each movement of a train from the station to the yard, an operation requiring perhaps 10 or 15 minutes. The result is that the carrier is required to pay huge amounts in "back pay" to a favored few of its employees, some of the individual payments running as high as $8,000. Provision is made in the law for appeal of these decisions to the courts, but the tendency of the labor organizations has been not to permit such appeals, but to take a strike vote immediately a railroad shows a disposition to find out whether the law really is as technical as some of the "neutrals" seem to think it is.

As one railroad officer expressed it: "Capitalization by some of the labor leaders of the cupidity of some of their members under the Adjustment Board procedure has resulted in litigation which is destroying the harmonious relations we have had with these organizations, built up over many years."

Most railroaders are decent and reasonable men. No one wants them to be denied a penny to which they are in justice entitled. But no person in his right mind, save a hopeless legalist, can contend that a day's extra wages (on top of wages already earned in short hours) for 15 minutes' work has any element of justice in it. With the railroads faced with the necessity of spending every cent they can for deferred maintenance, and for improvements in service to meet modern competitive conditions, every dollar paid out on such a technicality means one dollar less for railway employees who would be willing to work for the money. Money paid out in unjustifiable "back pay" means an industry just that much weaker in competition with highway and water lines—and consequently lower in its future prospects as an employer of labor.

Senate Committee Favors Train Limit Racketeering

Shyster legalism is a dirty business and one which we shall never believe would be approved by a majority of railroad employees if there were any means of securing an expression from them. And the same goes for the political racket of the train limit and "full" crew bills. A train limit bill has just been reported favorably by the Senate Interstate Commerce Committee. We do not know who wrote it, but it is an amazing piece of logic. Purported to be a safety measure, the report nevertheless states that "it might result in some re-employment." Regarding which claim it might be asked: Re-employment for whom? Clerks, or shopmen, or trackmen, or freight handlers? Obviously not, for, if compulsory employment is provided for additional trainmen, then obviously employment in those occupations where compulsion does not exist will decline. But the logic of the bill comes out most brilliantly in the assertion that "this legislation would tend to equalize the length of trains without necessarily increasing the total number of trains measurably." But if it does not increase the number of trains, how is it going to increase employment? And we suppose train lengths would be equalized by taking the excess cars off long main line trains and putting them on short branch line trains. Or perhaps by taking cars off the long ore trains in Minnesota and adding them to the banana trains from New Orleans. The number of cars that *can* be hauled in a train is determined not only by differences in traffic conditions on different railways and on main and branch lines of the same railway, but also by the power of available locomotives, which varies widely. It is easy to figure that train lengths can be equalized by adding to the load of a small locomotive cars not allowed to be pulled by a large locomotive—but only persons ignorant of or unwilling to be educated about railway operation figure that way.

The Senate Committee's report cites the increase in derailments as an argument in favor of the bill. But, of course, such accidents would inevitably tend to increase if the measure succeeded in its true purpose of increasing the number of trains operated and thereby the number available for derailment. The way to reduce derailments is to adopt a higher standard of maintenance of track and equipment, which, of course, is precisely the opposite of what this bill calls for—namely, the maximizing of train service at the expense of the maintenance and all other departments of the railroads.

Injury to a Majority of Employees

The train limit bill is a "make work" measure and nothing else, and popularly recognized as such even by trainmen themselves. It is a relic of the theory that the way to get rich is not to increase the total wealth, and see that you get your share of the increase, but rather to get for yourself a larger and larger share of a constantly diminishing total income. Such tactics are utterly inconsistent with a labor union viewpoint which recognizes that railroad labor has a legitimate interest in better regulation and more adequate taxation of competing agencies of transportation, because "make work" measures would handicap the railroads in meeting competition more than regulation of competitors could possibly help them. Moreover, a train limit law is doubly unjust to clerks, shopmen, maintenance men, signal men and all other classes who would suffer from the competitive handicaps thus placed on the railroads without getting any of the revenues of this political

racket. If the leaders of these other classes of employees are as astute as we believe them to be they will not only not support such short-sightedly selfish measures as this, but actively oppose them.

The railroads are an impoverished industry, despite which they have continued a high standard of wages and working conditions for their employees. In no other industry, probably, is the understanding and appreciation by managements of the legitimate aspirations of the employees so complete. The industry is subject to a mass attack from the outside, inroads from which injure the employees quite as much as they do the industry itself. Under such conditions, is there any industry which in justice and common sense ought to be so free from unreasonable internal dissension, and spared from racketeering by its own employees? With the spotlight of favorable public opinion on railroad labor as it is, can the organizations in their own interest afford to have their dirty linen washed before the public gaze, as must eventually happen if such rackets are persisted in?

A Time to Stand Firm

The railways are now at the cross roads with reference to their future tie supply. With increasing demands incident to the resumption of more normal maintenance programs, they are finding commercial stocks low and production at a low ebb. The problem is accentuated by the fact that, unlike most materials, crossties cannot be produced in a day or a month; on the contrary, from eight months to a year is required to cut, season and treat a tie adequately.

The problem now confronting the roads is one of stimulating production. One method and the most obvious is to increase the price offered. Recognizing this fact, one road raised its right-of-way quotation 20 cents per tie in recent weeks to stimulate production along its lines. Other roads are making similar increases. Such measures are legitimate and are effective in part.

Still other railways are thinking of lowering the requirements of their specifications as a means of stimulating production, with the thought that this is no time to draw too fine a line. This is a reversion to the thinking that prevailed prior to the war when every road interpreted its specifications in the light of its needs and there was complete lack of uniformity in the practices of different roads and even between the practices of the same road at different times. The result was chaos in purchasing and demoralization among producers.

To correct this situation, the Railroad Administration drafted and put into effect uniform specifications and a uniform code of inspection. Following the termination of federal control the American Railway Engineering Association refined this specification, and its acceptance has become widespread, with resulting benefits to the railways in the form of an improved product and corresponding benefit to the producers through the stability introduced into their operations. Any measure that will jeopardize, even in part, the advance that has thus been gained, will be a serious blow to all concerned.

Furthermore, the lowering of standards will fail in the objective desired—that of stimulating production—for such measures do not increase the number of ties produced, but merely divert them from the road which upholds the standards to the one which lowers them and ultimately bring about a lowering of the standards for all. It is proverbial that the tie hacker, the producer of a large part of the ties, makes a tie no better than he is required to. In dimensions, in workmanship, in timber, he works to minimum requirements. Any lowering of the requirements eases his task but does not add to the number of ties produced.

This is no time to give ground in a field in which reform has been gained with such great effort. Railway managements cannot afford to take any steps that, for the sake of a temporary advantage for their individual roads, will pave the way for demoralization of tie production for all roads. The way to stimulate the production of crossties does not lie through the lowering of standards.

American Locomotives for Chinese Railways

The Chinese Ministry of Railways is inquiring for from 40 to 65 locomotives of the 2-8-2 type and ten of the 2-8-4 type. The United States has been slipping badly on its export business and a determined effort should be made to rebuild it and maintain a proper trade balance. Many of our products we cannot export because of competitive and other conditions. Some, however, are peculiarly adapted to meet foreign needs and one of these is locomotives for the Chinese railways. Chinese railway operating conditions, for instance, are more nearly like those of this country than are those of the European nations. The comparative roughness and elasticity of the track structure in China makes difficult and unsatisfactory the use of the more rigid type of European locomotive structure; American designs are much more satisfactory. Even those locomotives built for China in recent years by European manufacturers have called for a number of important American specialties. This is because many Chinese railway officers are acquainted with American operating conditions and locomotive designs. Their preference for these specialties would seem to indicate a sympathetic attitude on their part toward our products. Presumably there are compelling reasons which should be examined and overcome, which forced them from going the full distance in purchasing complete American designs. From what we can learn, however, the difficulties

which confront the American manufacturer in securing such orders are not insurmountable.

It is true that American railway equipment manufacturers have had difficulty with some of their financial transactions in the past, and for this reason they may hesitate to re-engage in selling equipment to China. Reports indicate, however, a considerable progress toward more orderly and stable conditions in that country. Certainly the great need for railway equipment and supplies would seem to guarantee a market for our manufacturers, if they can devise the proper methods for selling and servicing their products, and of doing so on a safe and sound financial basis. Some of those, at least, who have been interested in the railway equipment business in China, are reasonably optimistic in this respect.

Large Railway Buying in First Quarter

Statistics compiled by the *Railway Age* and published elsewhere in this issue show that in amount of money involved railway purchases in the first quarter of 1937 were the largest in the first quarter of any year since 1930. Total purchases of equipment and materials from manufacturers amounted to $253,117,000. The comparable figure for the first quarter of 1936 was $125,725,000, and for the first quarter of 1935 was $85,657,000. Therefore, the increase over 1936 exceeded 100 per cent and over 1935 was about 200 per cent.

Relatively much the largest increase was in purchases of equipment. The value of the equipment ordered in the first quarter of 1935 is estimated at $4,152,000, in the first quarter of 1936 at $13,860,000, and in the first quarter of 1937 at $81,742,000. The increase over 1936 was 490 per cent and over 1935 was 1,487 per cent. The value of materials received from manufacturers in the first quarter of 1935 was $81,050,000, in the first quarter of 1936 was $111,865,000, and in the first quarter of 1937 was $171,375,000. Therefore, the gain over 1936 was 53 per cent and over 1935 was 111 per cent.

Total purchases from manufacturers in the first quarter of 1929 were $389,111,000 and in the first quarter of 1930 were $317,715,000. While purchases in the first quarter of this year were less than in 1929 or 1930, they exceeded those made in the first quarter of 1931 by $103,000,000, or almost 70 per cent.

The large increase in buying by the railways is due to both need and opportunity. They need large amounts of new equipment and of materials for maintenance, because, owing to the great declines in the amount of their equipment and the condition of their properties during the depression, they are in serious danger of becoming unable to handle traffic satisfactorily when it again reaches a peak next fall. They are being afforded the means of so largely expanding their purchases by increases in their net operating income which are providing them with both cash and credit.

The public wants this increase in railway buying to continue. It wants it to continue because it is helping promote re-employment and recovery. It wants it to continue because it desires adequate and satisfactory transportation.

But does the government at Washington want it to continue? If so, why is it threatening the railways with regulation which, by unnecessarily and excessively increasing their operating expenses, would reduce their net earnings and thereby reduce their ability to continue their buying? If the members of the Senate Committee on Interstate Commerce desire a continuance of railway buying on a large scale, why have they reported favorably a bill to limit trains to 70 cars which would largely increase operating expenses and correspondingly reduce railway buying?

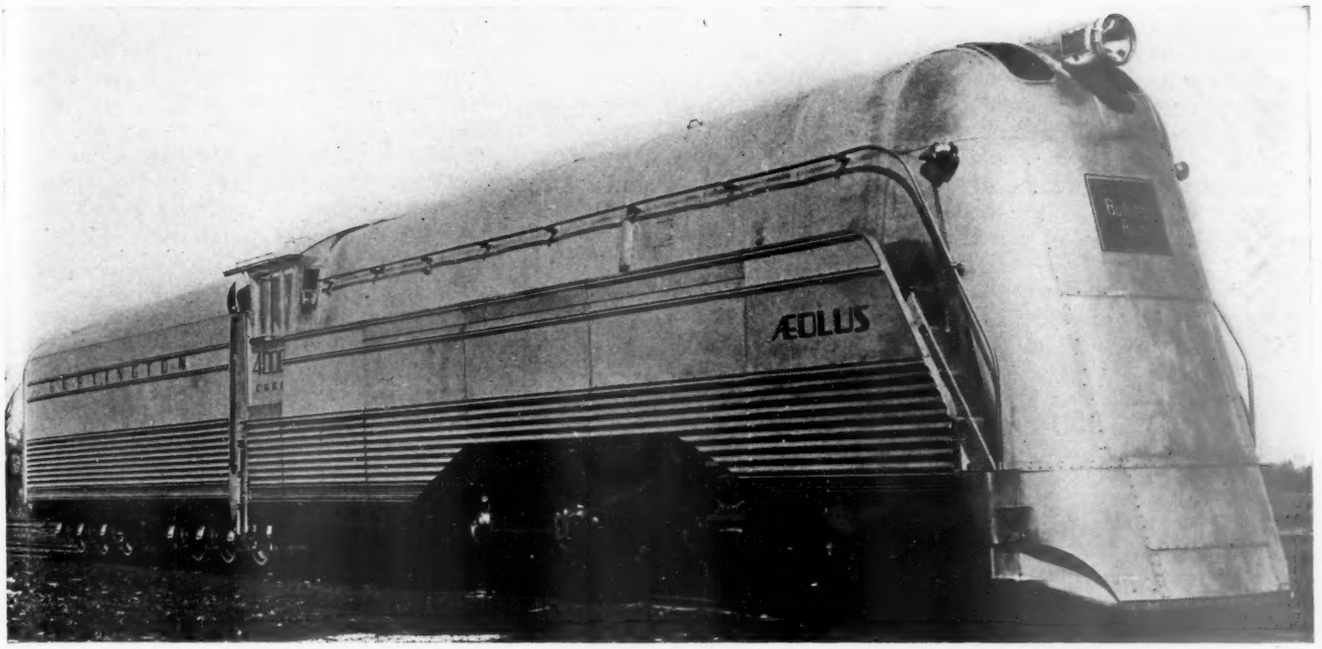
The proposed legislation to limit the length of trains would be merely a "racket" for the real or supposed benefit of one class of railway employees. It would be detrimental to all other classes of railway employees. It would be detrimental to hundreds of thousands of employees of the manufacturing industry by indirectly curtailing railway buying from their employers. It would be detrimental to the shipping public because of its tendency to help create a shortage of transportation. And the claim that it would increase safety is as false as it is hypocritical because it repeatedly has been demonstrated for a quarter century that the direct tendency of such legislation is to increase, not reduce, accidents.

Anyhow, Managements Can Still Declare Dividends, If There Are Any Earnings

As a piece of expert accountancy, the Interstate Commerce Commission's report on New Haven's affairs is first-class. . . . In its conclusions it will satisfy all who are acquainted with and interested in the perennial "railroad problem," for the logic which calls for public control of railroad security issues calls equally for control of expenditure of railroad funds derived from surplus earnings. But in its bearing upon future events, it leaves somewhat the impression of a locked door on an empty stable, if for no other reason than that railroad companies in general are unlikely in the future to come into the possession of much cash other than that derived from security issues. . . .

Thus, the tentacles of regulation are enwrapping the remaining small portions of the body of private activity in railroading. Already every limb of that body is almost entirely immobilized. There is little that it can independently do beyond wiggling its fingers and toes; there is but one important free action open to a railroad board, namely, the declaration and payment of a cash dividend from money earned and in bank. . . .

From the Wall Street Journal



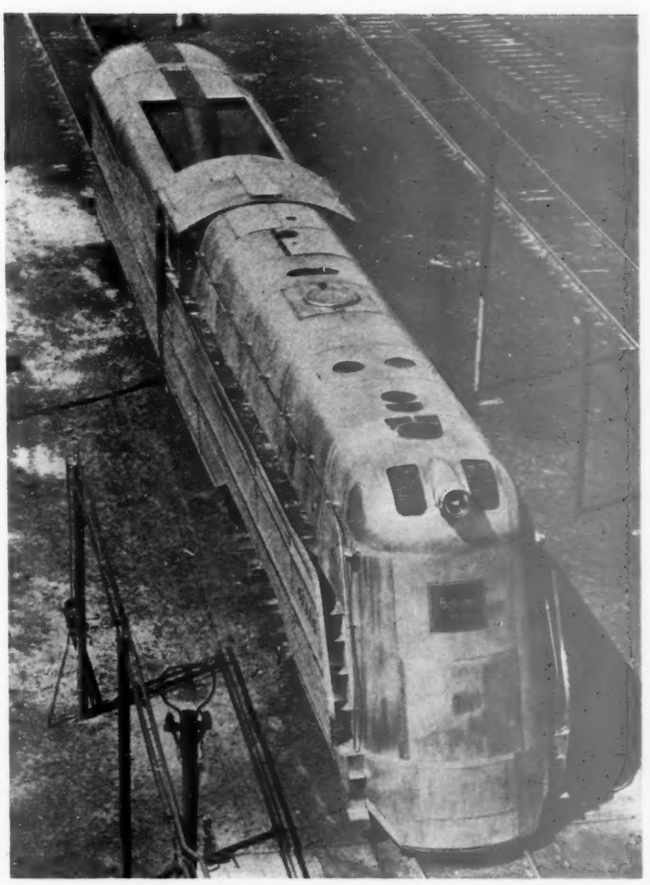
Burlington 4-6-4 Type Steam Locomotive Equipped for High-Speed Service

Burlington Builds Streamline Steam Locomotive

First of two units, from West Burlington shops, is especially designed for high-speed passenger service

THE Chicago, Burlington & Quincy has recently completed at its main locomotive shops at West Burlington, Iowa, the first of two streamline steam locomotives which will be used in regular high-speed passenger service and also serve as relief power for Zephyr Diesel-driven trains operating between Chicago and Denver, Colo., and between Chicago and the Twin Cities, Minn. An announcement of this addition to Burlington motive power equipment, as well as a brief description of dedication exercises held at West Burlington shops on April 11, was given in the *Railway Age* of April 17.

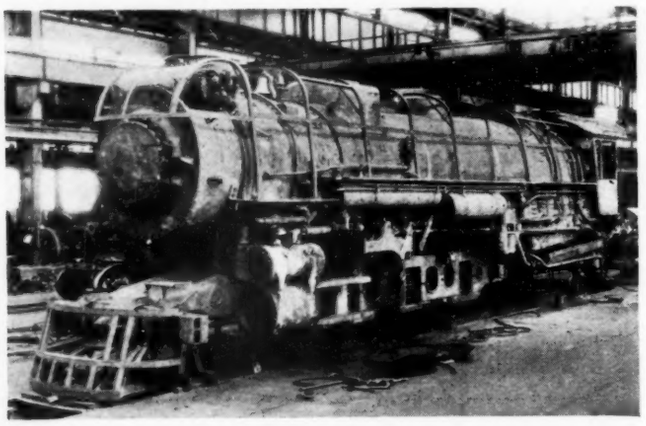
This locomotive, known as the Aeolus, or "Keeper of the winds," is one of a lot of existing standard Burlington 4-6-4 type locomotives, incorporating certain important changes in running gear details and equipped with a streamline stainless steel exterior sheathing and front-end design greatly similar in appearance to that familiarly identified with Zephyr equipment. The second locomotive will be built entirely new. The locomotive carries 250 lb. steam pressure and burns coal fed by a Standard mechanical stoker. It is equipped with an Elesco feedwater heater, Boxpok main driving wheels. Baker long travel valve gear and Barco M-1 power reverse gear. A Franklin C-2 type booster, applied to the



A View Over the Top of the Aeolus

rear trailing wheels, gives additional power for starting and rapid acceleration. Westinghouse electro-pneumatic brake-actuating equipment is installed, similar to that employed on the power units of the regular Zephyr trains.

The Aeolus has a weight on drivers of 208,000 lb., a total engine weight of about 200 tons, a combined engine and tender weight of 365 tons and is 94½ ft. long overall. The tender has a capacity for 24 tons of coal and 15,000 gal. of water, and is fitted with a coal pusher. Special light-weight alloy-steel reciprocating parts, including the main steam pistons, piston rods, crossheads and roller-bearing equipped driving rods, are of Timken design. The reciprocating parts weigh 995 lb. per side, as compared to 2,111 lb., with the older type. Crosshead shoes are made of forged aluminum alloy, faced with tin. The reciprocating weights are balanced to 30 per cent and produce a dynamic augment of 7,326 lb., at 100 m.p.h., or about one-third of the former amount. The cylinder size is 25 in. by 28 in. and the driving wheel diameter 78 in., both of these dimensions being unchanged. The locomotive has a rated tractive force of 47,700 lb. for the main engines and 11,700 lb. for the booster, or a total of 59,400 lb. It is capable of operating 100 m.p.h. and more without imposing excessive stresses in either the locomotive or track structure.



The Aeolus at West Burlington Shops—The Steel Frame for Supporting the Stainless-Steel Sheathing Is in Place

One of the particular features of this locomotive is the extensive use of roller bearings which are so generally installed as to make the locomotive practically fully roller-bearing equipped. Timken roller bearings were already applied to the engine-truck wheels, and American Steel Foundries roller-bearing units to the tender-truck wheels, previous to the recent shopping, at which time all driving- and trailer-wheel journals, as well as all driving rods, were also equipped with Timken roller bearings. In addition, pin-type roller bearings are used with all valve-motion pins in the Baker gear, including the back ends of the eccentric rods. The principal objectives sought in this extensive application of roller bearings are greater locomotive availability, freedom from delay due to oiling and servicing enroute, reduced machine friction, especially in starting, and lower lubrication costs.

The appearance of the stainless-steel sheathing, as applied to the locomotive and tender, is clearly shown in the illustrations and carries out the general design and the same front-end arrangement as that on the Zephyr Diesel power units. One of the views illustrates the locomotive in the process of reconstruction at West Burlington shops. The light structural steel framework, erected over the locomotive boiler and the pilot, is designed to serve as a support for the exterior sheathing, which is applied by the use of Shakeproof self tapping screws. The framework is secured to the running boards, not having direct contact with the boiler itself, and allowance for expansion is made where necessary by means of slots. The boiler is thus allowed to expand inside of the sheathing and any buckling of the exterior sheets is avoided. All panels below the running board swing out for running gear inspection and repairs, being held in place by pin connections. A swing-type pilot coupler is provided at the front end of the locomotive. This is covered by a panel which may be readily removed. Openings in the sheathing on top of the boiler accommodate the bell, whistle, sand box and safety valves. Just above the smokebox at the front of the locomotive, two louvred openings give access to short passages through which air is directed vertically upwards just back of the smokestack, tending to lift the smoke so that it will not interfere with the engineman's vision.

The Aeolus is expected to be able to maintain the Zephyr's 16-hr. schedule over the 1,034 miles between Chicago and Denver, without extending itself and with only two stops for refueling and six for water, most of the latter being coincident with regularly scheduled station stops. The locomotive is capable of speeds well over 100 m.p.h., and cruising speeds of 90 to 100 m.p.h. can be maintained for considerable periods of time. While it will be used occasionally for relief duty on the Zephyr runs between Chicago and Denver and Chicago and the Twin Cities, this locomotive is intended primarily to meet the demands for everyday high-speed passenger service.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading for the week ended May 1 totaled 782,423 cars, an increase of 21,241 cars or 2.8 per cent above the preceding week, an increase of 111,535 cars or 15.1 per cent above the corresponding week in 1936, and an increase of 213,496 cars or 37.5 per cent above the corresponding week in 1935. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loading

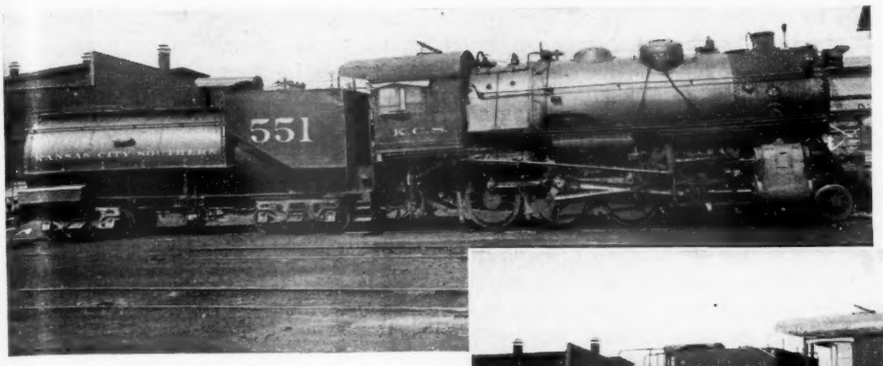
For Week Ended Saturday, May 1

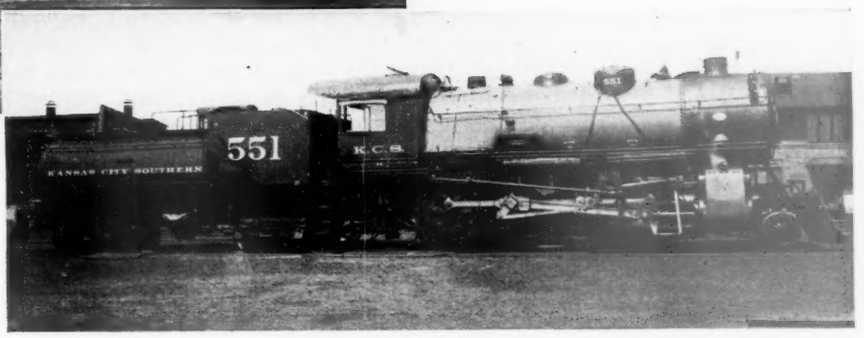
Districts	1937	1936	1935
Eastern	177,408	153,886	133,011
Allegheny	164,405	138,522	106,629
Pocahontas	51,437	47,205	35,410
Southern	103,945	97,527	84,837
Northwestern	124,375	84,811	79,578
Central Western	104,426	95,504	83,395
Southwestern	56,427	53,433	46,067
Total Western Districts	285,228	233,748	209,040
Total All Roads	782,423	670,888	568,927
Commodities			
Grain and Grain Products	28,031	32,667	25,602
Live Stock	14,853	15,180	14,087
Coal	124,606	119,567	84,294
Coke	10,397	7,655	5,054
Forest Products	37,162	32,164	27,334
Ore	70,182	17,580	20,161
Merchandise L.C.L.	171,308	162,481	161,204
Miscellaneous	325,884	283,594	231,191
May 1	782,423	670,888	568,927
April 24	761,182	665,949	558,936
April 17	751,328	642,278	611,141
April 10	716,044	621,843	586,568
April 3	726,687	613,581	545,456
Cumulative Total, 18 Weeks	12,836,303	11,116,376	10,375,946

Car Loading in Canada

Car loadings in Canada for the week ended May 1 totaled 49,447, an increase of 2,301 over the previous

(*Continued on page 828*)





After Reconstruction, This Locomotive Produced No Greater Stress in the Rail at 60 M.P.H. Than It Had Previously at 40 M.P.H. Locomotive Before Reconstruction (at Left); After Reconstruction (Below)

By G. M. Magee

Assistant Engineer, Kansas City Southern, Kansas City, Mo.

Locomotive Design and Rail Stresses

A discussion of the reduction of maximum rail stresses by suitable design of locomotives and by changing characteristics of existing motive power

TWENTY-FIVE years ago the demand in freight locomotives was for high hauling capacity. The locomotive was designed throughout with this end in view. As large a proportion of the weight was placed on the drivers as was possible. At that time the Consolidation type locomotive was popular, having four driving axles and only one "unproductive" pilot axle. Drivers of small diameter were used to give the steam force greater leverage. Speed was of secondary consideration, the usual operating speeds ranging from 10 to 25 miles per hour. Most freight moved in drag trains and the running time over the district frequently exceeded the 12.5 mile-an-hour minimum pay schedule.

Today, the demand is for speed. Operating speeds of 60 miles-an-hour are not infrequent for manifest freight trains. New locomotives are designed with high boiler capacity and large diameter driving wheels for high speed operation. A larger proportion of the weight is placed on the pilot and trailing wheels, because the increased boiler weight would overload the drivers and the locomotive with the reduced proportion of its weight on drivers still has sufficient hauling capacity to move over the ruling gradients the tonnage that can be moved over the district in the limited time allowed.

A sufficient number of modern high-speed locomotives obviously cannot be provided in the space of a few years to handle all the tonnage. The older locomotives must still be used to augment the service until economic conditions permit their replacement. The axle loads of the older locomotives are usually lighter than of the new and to the uninformed no hazard is apparent in their operation at speeds approaching that of modern high-speed power. Thus, a situation is growing in importance which must be adequately appreciated if we are to protect the physical property against damage.

The greater punishment that is inflicted upon the track structure by a comparatively light locomotive of the older type operating at high speed can only be realized by proper analysis of the wheel loads and track stresses which result. The amount of rail stress is indicated by the sharpness of the curve of rail depression. Obviously, four driving axles of equal weight, with no pilot or trailing axles, will produce a sharp bend in the rail under the front and rear drivers. If 6 per cent of the weight on these drivers is transferred to the inner drivers, the depression curve will be rounded off much better under all the drivers. Then, if in addition pilot and trailing wheels, with lesser loads, are closely spaced to the drivers the depression curve is still further smoothed and improved. The formulae developed by the Special Joint Committee on Stresses in Railroad Track of the American Railway Engineering Association and the American Society of Civil Engineers show that rail stresses are much higher under the front and rear drivers of Consolidation and even Mikado locomotives where the static weight of the locomotive is equally distributed over the drivers.

At high speed operation, the dynamic augment becomes a very appreciable factor in the older locomotives. The reciprocating weights of these locomotives were relatively large. The customary practice was to place overbalance in the driving wheel counter-weights equal

to 50 per cent of the reciprocating weight to oppose the inertia of the reciprocating mass at the end of the stroke and reduce the nosing of the locomotive. This overbalance at the lower positions of the counterweight is additive to the wheel load.

For best results, the overbalance should be equally divided among all the drivers. Owing to the small driving wheel diameter it was generally impossible to place the full proportion of the overbalance in the main driver, in addition to the counterweight required to balance the revolving weight of main rod, side rod, eccentric crank and pin. Consequently, the deficiency in the main driver was added to the overbalance of the remaining drivers in order to provide the desired total amount. Thus further additional load was added at the undesirable locations of front and rear drivers. It is not difficult to understand, therefore, how the older type locomotives, which performed very satisfactorily at the speeds for which they were designed, produce much higher rail stresses at high speeds than their heavier sisters of modern design which have most advantageous distribution of their static weight, as determined by later research, large enough diameter wheels to permit an equal distribution of the overbalance, and effective cross-counterbalancing of the main drivers.

Effect on Rail and Bridges

Rail and bridges, particularly, require adequate protection against this condition. Both have relatively long life if protected against damage from over-stress, while the investment in them represents a substantial proportion of the total investment in railway property. Public interest and safety demand that the increase in the speed of existing locomotives and the increase in the weight of new locomotives be governed by sound engineering considerations.

Fortunately, the situation with regard to bridges is more favorable than with respect to rail. Bridges were in general designed for low working stresses and with liberal allowances for impact. The work of the British Bridge Stress Committee and of J. B. Hunley, bridge engineer of the C. C. & St. L. railway, have produced reliable data for determining impact, from which it has been found that the empirical impact formulae formerly used made larger provision for impact than is actually required in most cases. The older locomotives generally had wheel loadings corresponding with the bridge ratings and the liberal impact allowances permit their operation at high speed with safety over bridges, even with their relatively high dynamic augment. These new bridge investigations are particularly valuable in that they permit a determination of just what speed is safe for operation of the older type locomotives.

With new modern locomotives, axle loads are generally increased quite materially. But the size of drivers is also increased to provide for high speed operation

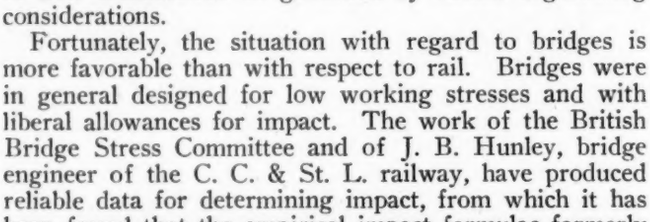


Fig. 1—Diagram Showing the Maximum Stress Set Up in the Base of the Rail by Two Types of Locomotives at Different Speeds

and as a result the axle spacing is wider and the load per foot of bridge is not greatly increased. In addition, the dynamic augment is less on these high driver locomotives. As a result, modern power with high axle loading can generally be accommodated on existing structures. Prior to the acquisition of new power, however, the new impact determinations should be utilized as a guide to determine whether the bridge structures will accommodate the proposed locomotives at the required speeds without overstress.

With respect to rail, the operation of older type freight locomotives at high speeds generally results in high dynamic augment from the overbalance. With new modern power, the increased axle loads and wider axle spacing both tend to produce higher rail stresses. It is only through improvement in counterbalancing and proper distribution of driver loads that it is advisable to operate these locomotives over moderate weight rail at high speeds. The recent trend towards heavy rail is fortunate in view of the trend towards heavier axle loads and larger driver diameters in new locomotives.

A uniform practice for the protection of rail against over-stress is lacking. The excellent work of the Special Committee on Stresses in Railroad Track has developed valuable information on methods of determining rail stress due to static loading, dynamic augment, speed, lateral bending, track condition, etc. Research work of other investigators, such as that of Shamberger and Langer on the Great Northern and the Pennsylvania railroads, respectively, has furnished additional valuable knowledge. This information, however, has not been made the basis of uniform practice for use by all railways in the protection of their rail.

The following method, which is based upon the work of the Special Committee, has been used for several years by the Kansas City Southern for guidance in determining the permissible operating speed of locomotives and in establishing limits in the acquisition of new locomotives. It, admittedly, is not perfect but it can be used with the assurance the rail will be adequately protected against damage from overstrain. It is hoped that sufficient interest will be stimulated in this problem to result in more information being developed that will determine more accurately the factor of safety required.

The customary method of engineering design is to calculate the stress due to dead and live load, add an impact factor if impact occurs, and design to a working stress which is sufficiently below the yield point or ultimate strength of the material to provide an adequate factor of safety for variability in material or loading. The same general method appears desirable for the protection of the rail.

DEAD LOAD. The dead load, or weight of the rail itself, is negligible in its effect on rail stress, owing to its practically continuous support.

LIVE LOAD. The live load consists of the static wheel loading and the dynamic augment. The latter may be calculated from the counterbalancing data, using the usual formula of mechanics to determine the centrifugal force of the unbalanced revolving weight or counterweight. Correction must be made for the out-of-plane effect of the revolving weights, so that this centrifugal force will be determined in the plane of the rail.

From the live load per wheel and the wheel spacing, the rail stress may be calculated by known formulae of mechanics, considering the rail to be a continuous girder resting upon a uniform and elastic support. The formulae are not convenient to use, however, and the Special Committee has prepared a master diagram to facilitate their application, which has been published in several volumes of the A.R.E.A. Proceedings. The

method and master diagram developed by the Special Committee permit an accurate determination of the rail stress due to live load. This has been developed in a very satisfactory and complete manner and requires no further investigation.

IMPACT. The tests of the Special Committee have shown a tendency towards increase in stress with increase in speed. This is presumably due to irregularities in track surface or alignment, irregularities of wheel surface, etc. After examination of the test results in the various progress reports of the Special Committee, a speed or impact factor of one per cent per mile per hour of speed for wheels of 33-in. diameter, and varying inversely as the diameter of the wheel for other wheel diameters, was considered to conform to these test results. For a 66-in. driving wheel, the speed factor would be 0.50 per cent per mile an hour of speed.

Factor of Safety

(a) *LATERAL BENDING.* Owing to the wheel loading having a horizontal component that produces bending of the rail in a horizontal plane, a lateral bending stress is produced in the base of the rail which is additive to the vertical bending stress on one side or the other. Examination was made of the Special Committee's reports and a value of 15 per cent was considered adequate for lateral bending at all speeds.

(b) *TRACK CONDITION.* Owing to occasional mechanically worn, decayed, or low ties, unusual bending stresses are produced in the rail. The standard of maintenance or attention which is paid to proper tie support will of course determine the extent to which unusual rail stresses will be produced by track condition. After examination of the Special Committee's reports, a factor of 25 per cent was considered adequate to provide for the effect of track condition at all speeds.

(c) *LOCOMOTIVE FACTOR:* The Special Committee found that the locomotive loading was likely to vary from that specified in the loading diagram and a locomotive factor of 5 per cent was considered adequate to care for this contingency.

(d) *STEAM EFFECT.* The main rod thrust has a vertical component which is added to the main driver load at certain positions of the crank pin. However, at high speeds where the rail stress is ordinarily greatest owing to dynamic augment and speed effect, the steam effect is very largely reduced owing to the reduction in steam pressure throughout the stroke at these speeds. Also, a vertical main rod thrust of equal magnitude is exerted at the cross-head, tending to change the distribution of the driver loads. The steam effect was therefore provided for by an allowance of 3,000 lb. per sq. in. in rail stress in the factor of safety.

(e) *TEMPERATURE STRESSES.* Little information is available on the temperature stresses which are developed in ordinary track construction. It is certain that a stress sufficient to overcome joint bar friction is developed. Theoretical considerations indicate that this friction is approximately 60,000 lb. maximum, for four-hole joints and 90,000 lb. for six-hole joints with very tight bolts. Four-hole joints with 85-lb. rail would develop a rail stress of 7,000 lb. per sq. in. Six-hole joints with 131-lb. rail would develop a rail stress of 7,000 lb. per sq. in. Accordingly, 7,000 lb. per sq. in. was allowed in the factor of safety to provide for temperature stresses.

(f) *RAIL WEAR.* On the outer rail of curves an allowance should be made for reduction in strength due to loss of area by flange wear. An investigation of 85-lb. rail on curves shows that the reduction in section modulus may be adequately allowed for by a provision of 10 per cent.

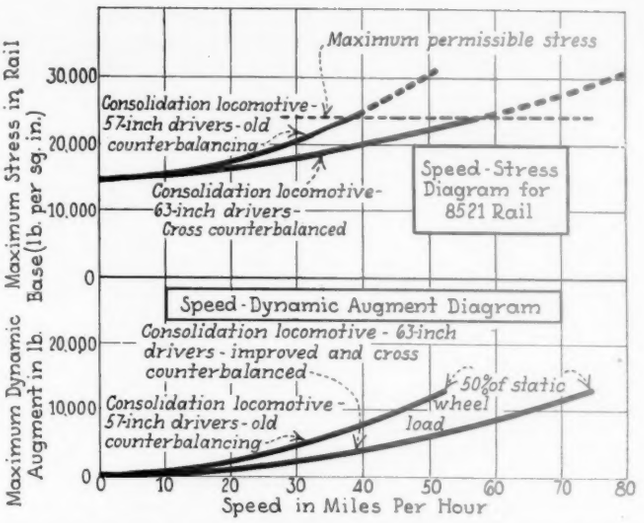


Fig. 2—Diagram Showing Reduction in Rail Stress and in the Dynamic Augment Effected by Reconstruction of a Consolidation Locomotive

(g) *UNBALANCED ELEVATION.* On the outer rail of curves, A.R.E.A. recommendations limit the speed of operation to 3 in. unbalanced elevation. For an 84-in. height of the center of gravity, this would result in an increase in wheel load on the outer rail of 15 per cent.

Working Stress of Rail

In accordance with the method used, the permissible rail stress for live load and impact is thus established at a value that will provide a factor of safety to include the factors previously discussed, as follows:

(a)	Lateral Bending	15%
(b)	Track Condition	25%
(c)	Locomotive Factor	5%
(d)	Steam Effect	3000 lb. per sq. in.
(e)	Temperature stresses	7000 lb. per sq. in.
(f)	Rail Wear	10%
(g)	Unbalanced Elevation	15%

The yield point and endurance limit of rail steel were considered to approximate 50,000 lb. per sq. in., in accordance with data on Endurance and Other Properties of Rail Steel, technologic paper of the Bureau of Standards, No. 363. The permissible bending stress for live load and impact in the base of the rail may then be determined as:

$$\frac{50{,}000 - (3000 + 7000}{1.00 + 0.15 + 0.25 + 0.05 + 0.10 + 0.15)} = 24{,}000 \text{ lb. per sq. in.}$$

If, by way of illustration, the rail stress in 9020 section rail is calculated by the foregoing method for a Mikado (2-8-2) type freight locomotive having 57-in. diameter driving wheels spaced 68 in. center-to-center, with conventional counterbalancing, the rail stress at 40 miles per hour under each wheel will be as follows:

Older Type Mikado With Conventional Balancing

	Wheel Load in Lb.	Dynamic Augment in Lb.	At 40 Miles per Hour Maximum Bending Stress in Base of 9020 Rail (Lb. per Sq. In.)
Pilot	15,000	—	12,400
Front Driver	30,000	8,000	24,000
Intermediate Driver	30,000	8,000	20,300
Main Driver	30,000	−6,000	6,100*
Rear Driver	30,000	8,000	25,700
Trailer	20,000	—	17,300

* This stress will be 23,000 lb. per sq. in. with drivers in position of rotation to give maximum stress under main driver.

For a modern 4-8-4 type locomotive with 70-in. diam-

eter driving wheels spaced 73-in. center-to-center, with the static wheel loading most advantageously distributed between the drivers and with proper cross-counterbalancing, the rail stress would be as follows, at a speed of 60 miles per hour:

	Wheel Load in Lb.	Dynamic Augment in Lb.	At 60 Miles per Hour Maximum Bending Stress in Base of 9020 Section Rail, (Lb. per Sq. In.)
Front Pilot	20,000	—	16,800
Rear Pilot	20,000	—	10,800
Front Driver	33,000	7,000	23,200
Intermediate Driver	37,000	7,000	22,900
Main Driver	37,000	7,000	23,200
Rear Driver	33,000	7,000	22,600
Lead Trailer	27,500	—	17,800
Rear Trailer	27,500	—	22,500

Thus on the one hand a 2500 h.p. Mikado locomotive with 60,000 lb. maximum driving axle load produces a rail bending stress of 25,700 lb. per sq. at 40 miles per hour, whereas a 3500 h.p. 4-8-4 type modern locomotive with 74,000 lb. maximum driving axle load, if properly designed, will produce a maximum rail bending stress of only 23,200 lb. per sq. in. at 60 miles per hour. In the accompanying diagram, Fig. 1., the calculated rail bending stresses in 9020 section rail for these two locomotives at various speeds are shown. It will be noted that with the lighter Mikado locomotive, the maximum permissible rail bending stress of 24,000 lb. per sq. in. will be exceeded at speeds over 36 miles per hour, while with the heavier 4-8-4 type locomotive with cross-counterbalancing and weight distributed in accordance with later research, this maximum permissible bending stress is not exceeded except at speeds of over 63 miles per hour. The rate at which the bending stresses increase at high speeds well illustrates the danger of using the wheel load alone as a criterion of the amount of punishment of the track structure.

Revising Existing Power

Investigation of existing power will frequently disclose that improvement can be made in the counterbalancing at a very reasonable expenditure that will make a surprising reduction in rail stress at high speeds. For example, the bending stress in the base of 8521 section rail for a Consolidation type locomotive with 57-in. drivers is shown in Fig. 2. The axle spacing was sufficient to permit the installation of new 63-in. driving wheels, fully cross-counterbalanced, and the improvement in rail stress may be noted from Fig. 2. The cross-counterbalanced locomotive produces no greater rail stress at 60 miles per hour than it did formerly at 40 miles per hour, and the riding condition was much improved.

In ordering new wheel centers for Pacific type locomotives, it was found that with these new wheel centers of the same diameter, properly counterbalanced, and the main drivers cross-counterbalanced, the locomotives would produce the same bending stress in 8521 section rail at 64 miles per hour as they did formerly at 53 miles per hour. In addition, the dynamic augment per wheel was reduced so that it would not exceed 50 per cent of the static wheel load except at speeds above 85 miles per hour, whereas formerly this limitation was exceeded at speeds above 73 miles per hour. This permitted an increase in operating speed on heavy rail where rail bending stress was not the limiting consideration.

By restricting the speed of existing locomotives and designing new locomotives in accordance with a permissible working stress of 24,000 lb. per sq. in., the rail will be adequately protected against line kinks, surface bends, or breakage, except in the event of defects within the rail steel itself. It is recognized that further investigation should be given the determination of certain of the above factors which comprise the factor of safety to be allowed. It is hoped that this article may serve to concentrate interest on this problem to the end that a uniform method may be adopted generally for limiting rail stress to protect the rail adequately. It is believed that the method herein outlined is fundamentally sound, that further investigation is required only to the extent of determining more accurately certain of the factors involved, and that subsequent investigation will show the permissible stress as established to provide adequate rail protection.

In addition to protecting the rail against excessive bending stresses in its functioning as a girder, attention should also be directed towards its protection against too highly concentrated bearing pressures. This is a somewhat controversial subject that has been given attention in the past by several prominent rail engineers, including the late Dr. P. H. Dudley of the New York Central and W. C. Cushing of the Pennsylvania. It has also been discussed in A.R.E.A. Rail Committee reports. Conclusive investigations are not available from which a uniform practice may be established. However, it is a subject which the trend towards increasing wheel loads on relatively small diameter wheels, particularly on locomotive tenders, is bringing into the foreground.

Recent investigations indicate that the intensity of bearing pressures is a factor in rail batter, rail corrugation, rail flow on curves, and the development of transverse fissures. The hardening of rail ends, the use of special rail on curves, and controlled cooling and normalizing of rail are invaluable remedial measures. Consideration should unquestionably be given to the limitation of the intensity of bearing pressures on those wheels of locomotives and cars where such a limitation will not be an economic detriment. The driving wheels of locomotives are of sufficient diameter so that the bearing pressures developed are usually less than under the non-productive truck and trailing wheels. Theoretical computations based upon the elastic deformation of the rail and wheel may be used as a guide. The importance of bearing pressures and their effect on the life of rail justify a thorough investigation and the establishment of a uniform acceptable practice. Renewed activity for the development of an economical method for the production of a sorbitic rail steel, free from shatter cracks, is necessary for continuing progress in the industry.

Freight Car Loading

(*Continued from page 824*)

week and 2,219 over the corresponding week last year, according to the Dominion Bureau of Statistics.

Total for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
May 1, 1937	49,447	30,559
April 24, 1937	47,146	31,731
April 17, 1937	46,865	31,207
April 25, 1936	47,228	26,755
Cumulative Totals for Canada:		
May 1, 1937	801,447	485,912
April 25, 1936	720,599	396,956
April 27, 1935	725,355	389,846

A NEW METHOD OF MAKING UP SLEEPING-CAR BERTHS has been developed by the Canadian National, according to W. W. Swinden, general superintendent of sleeping and dining car services. The new operation, termed "loose bed," leaves the bed coverings loosely draped over the side of the berth, allowing complete freedom of movement.

The Southern Pacific Handled Most of the Materials That Went into the Construction of the Majestic San Francisco-Oakland Bay Bridge

Switching Limits Established in the Middle of a Bay

Southern Pacific adopted unusual operating methods in handling material for San Francisco-Oakland bridge

THE Southern Pacific played a major part in the transportation problems involved in the construction of the $77,000,000 San Francisco-Oakland Bay bridge. The handling by the S.P. of 22,607 carloads of freight used in its construction required the initiation of unusual operating methods, including the extension of the switching limits from the mainland at San Francisco out into the bay directly to the bridge pier sites. This huge volume of freight, the equivalent of a solid train 214 miles long, consisted principally of fabricated steel members ready for erection, concrete aggregates, lumber and construction equipment.

Storage Space Provided

The construction requirements involved the provision of storage area for a maximum of 14,000 tons of steel at Oakland pier, and the constructing of 5,300 ft. of tracks in the storage area, at a cost of about $13,000; establishing freight tariffs to include the services of storage, unloading and reloading the steel in the storage area, and the movement of these materials to the pier sites; and providing six industrial locations in Oakland and San Francisco for contractors' operations.

The Southern Pacific handled, through these barging arrangements, all of the bridge steel that went into the four towers of the suspension section on the west side of Yerba Buena Island; the anchor arm and the A frame of Pier 4; and also the steel for the entire structure on the east side of the island.

The largest single steel member handled in the tower sections weighed 78 tons, and the smallest 42 tons. The main deck struts in these towers weighed about 65 tons each and were handled in one piece. The diagonal sections ran about 15 tons. Four pieces that went into the anchor arm of Pier 4 weighed 74 tons each.

This steel came from shops at Ambridge, Pa., and Gary, Ind., where the members had been fabricated ready for erection. It was moved in shipments of 1 to 30 cars and was spread over a considerable period to meet construction requirements. Most of the shipments were on flat cars and much of it in double and triple loads. Some of the loads were of such unusual length, height and width that it was necessary to handle them over the routes where the greatest tunnel clearance existed, and over portions of such routes in daylight, as a safety precaution. The longest piece was 91 ft., the widest 10 ft. 6 in., and the highest above rail 17 ft. 6 in.

Yard Operations

About 50,000 tons of steel was handled through the storage yard at West Oakland. Arriving there, the steel was unloaded from the cars, and remained 90 days for weathering before it was sandblasted to a clean surface and red-leaded. It was because of this painting operation that a large storage area was necessary, so that the various pieces could be laid out separately, rather than being stored in piles.

As the various pieces were required in the bridge structure, they were reloaded onto cars in the storage area, switched onto the railroad's steel car barges, and towed to the pier sites, where the contractors' cranes lifted them directly from the cars into position on the

bridge. As many as 13 cars of steel were handled on a barge at one time. Reloading the cars in the storage area was carefully planned. Blue print charts were used to get the maximum loads on the cars and the maximum number of cars on the barge, and also to insure that the steel members were so placed on the cars that they could be lifted by the cranes with greatest facility and in the order of their position in the structure.

Barges loaded with steel for the cantilever structure on the east side of the island were floated out to and under the work as it progressed over the bay. This was accomplished by landing the loaded barge alongside one of the contractors' empty barges that had been anchored in the desired location. The principal steel pieces were then lifted by the bridge cranes direct from the car barge and set into place. Small pieces were loaded onto the contractor's barge to be used when needed, while the railroad's barge returned to Oakland pier for another load.

Other Tonnage

Other heavy tonnage handled by the railroad included the aggregates for the concrete work. The concrete required for the construction of all the bridge piers was batched in a plant erected by the contractor at S.P. Wharf No. 2 at Oakland pier, where the plant's bins had a storage capacity of 1,500 tons. These bins were filled by cars being unloaded into track hoppers directly under the wharf and were delivered on a conveyor belt to the bunkers. After the materials were batched from the bins through electrically operated hopper scales, the batches were delivered to eight barges, each containing compartments for 80 batches of 3½ cu. yd. content. The barges were then moved to the pier site where the concrete mixers on the barges mixed the concrete, which was delivered by conveyors into place. There were 8,597 cars shipped over S.P. lines to the wharf.

A large amount of the tonnage for the Golden Gate bridge, now nearing completion over another portion of San Francisco bay, moved by water. The S.P., however, handled 96 cars of steel, wire rope, cable clamps, wire, electrical equipment, lumber and piling for this bridge, as well as 299 cars of rock, sand and gravel. Because of the swift and treacherous currents through the Golden Gate, this material could not be barged to the bridge pier sites, but was delivered to the contractor on the shore.

146 Million Pick-Up In First Quarter Buying

THE struggle of the railroads, in the face of increasing material prices and other new difficulties, to keep abreast of the persistent increase in their traffic, and to strengthen their bulwarks to withstand the peak of demand for equipment next fall, is seen in the dollar volume of their purchasing in the first quarter of the year.

In summaries which have been prepared by the *Railway Age* from special reports received from carriers, and this paper's own week-by-week records of equipment ordered, the purchases made by the Class I railroads in the first three months of 1937 of materials and equipment from manufacturers are estimated to total approximately $253,000,000. This is 100 per cent more than the purchases made in the same three months of 1936. The same summary shows that purchases of materials and equipment, including fuel, totaled approximately $341,000,000, and were 77 per cent larger than in the first quarter of 1936. Materials purchased for railroads by construction contractors are excluded from these totals.

In almost every class of buying, purchases were larger in February than in January, and were larger in March than in February. Expenditures for materials and supplies, exclusive of fuel, totaling approximately $171,000,000, were 53 per cent greater in the first three months of 1937 than in the same months of 1936, although still approximately $60,000,000 below the corresponding expenditures in 1930. The value of equipment ordered from builders, totaling approximately $82,000,000, was almost six times larger than the first quarter commitments of 1936 and about $4,000,000 under the first quarter commitments of 1930. Total purchases of materials and supplies and equipment from manufacturers for the three months were only $65,000,000, or 24 per cent, under the corresponding values in 1930, although falling short of the same totals for 1929 by approximately $135,000,000, or 52 per cent. Expenditures for fuel during the first quarter, totaling approximately $87,000,000, were 20 per cent greater than in the same three months of 1936, and exceeded the corresponding expenditures in 1930 by approximately $250,000.

First quarter purchases of fuel were largely made under wage agreements prevailing in 1936; and to a degree, the materials and supplies received by the railroads in the first quarter were ordered before the 1937 prices became effective. The increases in the purchases for the first quarter thus more largely reflect increases in the volume of buying than increases in material costs. The general rise that has already occurred in material prices and the additional increases in prospect, especially those which are inevitable in fuel buying, should new legislation now pending be enacted, are factors definitely present in current buying by the railroads and are expected to reveal themselves more clearly during the second quarter.

Purchases of Supplies and Equipment from Manufacturers—3 Months†

	Materials* received from manufacturers (000)	Equipment ordered from manufacturers (000)	Total from manufacturers (000)	Fuel (000)	Total including fuel (000)
1929.....	$237,397	$151,714	$389,111	$91,703	$480,814
1930.....	232,690	85,023	317,713	87,310	405,023
1931.....	141,181	8,919	150,100	66,119	216,219
1932.....	76,700	1,594	78,294	53,700	131,994
1933.....	54,764	368	55,132	45,409	100,541
1934.....	86,214	17,885	104,099	55,447	159,546
1935.....	81,050	4,152	85,657	67,350	153,007
1936.....	111,865	13,860	125,725	68,518	194,243
1937.....	171,375	81,742	253,117	87,551	340,668

† Subject to revision.
* Includes rail and forest products.

Purchases of Material, Exclusive of Equipment—3 Months*

1937	Fuel (000)	Cross-ties (000)	Other material (000)	Total (000)	Total less fuel (000)
January	$25,872	$3,993	$47,195	$80,400	$54,528
February	26,026	3,307	45,984	79,474	53,448
March	35,653	5,402	51,970	99,051	63,398
Three months ...	$87,551	$12,702	$145,149	$258,925	$171,374
1936					
January	$21,859	$3,027	$29,656	$55,649	$33,790
February	24,355	2,371	29,146	58,298	33,943
March	22,304	3,312	36,611	66,435	44,131
	$68,518	$8,710	$95,413	$180,382	$111,864

* Subject to revision.

Would Regulate Holding Companies

I.C.C. report in New Haven finances investigation calls for control of railroad investments

WASHINGTON, D. C.

DECLARING that the present law is defective insofar as it attempts to regulate railroad holding companies and that "if the law is to remain as it is at present, permitting common carriers to form holding companies and to function through subsidiary companies not subject to the act, such companies and subsidiaries should be made subject to our jurisdiction and regulation as to accounting and the issuance of securities," Commissioner Mahaffie, speaking for the Interstate Commerce Commission, in a decision handed down on May 8, in the commission's finance investigation of the New York, New Haven & Hartford, definitely placed the commission on record as favoring enactment of legislation to control holding companies in the railroad field.

The 113-page report, which follows very closely the proposed report of Examiner O. L. Mohundro (see *Railway Age* of January 23, page 184), is the result of an investigation which was ordered on the commission's own motion on November 12, 1935, after Co-ordinator Eastman had omitted the company from the list he had selected for investigation by Senator Wheeler's subcommittee which is now concluding its investigation of the Van Sweringen "empire." The report covers the New Haven's activities from July 1, 1913, to October 23, 1935, and is almost entirely devoted to the effects of the railroad's outside investments in other railroads, trolley companies, steamship companies and other activities.

The report totals the losses from these investments at $330,000,000, including $70,000,000 listed as recorded losses, $154,000,000 listed as "constructive losses," and $105,000,000 listed as "potential losses." The report goes on to state that the record shows that had the New Haven confined its activities to ordinary railroad operations and had it not used its income to absorb losses resulting from outside operations, it would have avoided the present financial difficulties that plague it.

Roaming in Non-Transport Fields Dangerous

Only in the conclusion of the commission's report does it differ materially from the proposed report of Examiner Mohundro. Commissioner Mahaffie, who is a member of Division 4 of the commission, which handles all the finance cases, goes into considerable detail to point out how the commission has repeatedly warned the railroads and the country that excursions into other than railroad operations usually result in financial difficulties and often bankruptcy and reorganization for the railroad which chooses to forsake transportation for "greener fields." Commissioner Mahaffie cites the conclusions reached by the commission in the New England Investigation, decided June 20, 1913, as follows:

"In conclusion this Commission desires to call attention to one lesson from this investigation of national application.

"No student of the railroad problem can doubt that a most prolific source of financial disaster and complication to railroads in the past has been the desire and ability of railroad managers to engage in enterprises outside the legitimate operation of their railroads, especially by the acquisition of other railroads and their securities. The evil which results, first, to the investing public, and, finally, to the general public, can not be corrected after the transaction has taken place; it can be easily and effectively prohibited. In our opinion the following propositions lie at the foundation of all adequate regulation of interstate railroads:

"1. Every interstate railroad should be prohibited from expending money or incurring liability or acquiring property not in the operation of its railroad or in the legitimate improvement, extension, or development of that railroad.

"2. No interstate railroad should be permitted to lease or purchase any other railroad, nor to acquire the stocks or securities of any other railroad, nor to guarantee the same, directly or indirectly, without the approval of the federal government.

"3. No stocks or bonds should be issued by an interstate railroad except for the purposes sanctioned in the two preceding paragraphs and none should be issued without the approval of the federal government."

Mr. Mahaffie asserts that much that was said in that report is very pertinent in the light of subsequent developments and existing conditions. He shows that of total losses of the New Haven, by far the greater part had their inception in expenditures for purposes other than construction, maintenance, or physical operation of the railroad per se.

New Haven Not Only Offender

He continues to point out that the New Haven is not the only railroad that has transgressed the bounds of orthodox finance and has, therefore, suffered greatly as a result of its so-called outside investments and guaranties. He cites a few examples, such as the contract of the Denver & Rio Grande Western which, in substance, guaranteed payment of the interest on the Western Pacific first-mortgage bonds and further agreed, in practical effect, that following the completion of the Western Pacific's line, it would advance to that company such other sums as might be necessary to meet its operating deficits and maintain its railroad in operation. The report shows that "this ill-advised contract resulted in the rendering of a judgment against the Denver & Rio Grande Western in the sum of $38,270,343 which brought financial disaster to the Denver companies."

There follows a discussion of the acquisition of the capital stock of the Lehigh Valley and the Wabash by the Pennsylvania, which action was severely criticized by the commission when it said that "The purchases of Lehigh Valley and Wabash stocks by the Pennsylvania gave no indication of direct financial profit at the

time the purchases were made. Computations made by our Bureau of Inquiry and presented in its brief the correctness of which has not been questioned by respondents, indicate that up to April 30, 1930, the cost to the Pennsylvania in interest paid and in interest lost on securities sold to finance the purchases amounted to about $9,072,006.25, which exceeds by $2,590,694.29 the amount of the dividends received on the stock acquired. It should be noted that the common stock of the Wabash acquired by the Pennsylvania, amounting to $36,290,000, par value, had never paid a dividend."

Citing still more evidence of the inadvisability of acquisitions of one railroad's stock by another, Commissioner Mahaffie infers that the purchases of capital stock of the Gulf, Mobile & Northern and the Chicago, Rock Island & Pacific by the St. Louis-San Francisco and the purchases of capital stock of the St. Louis-San Francisco by the Rock Island probably had a great deal to do with the fact that both roads are now undergoing reorganization under section 77 of the Bankruptcy Act. Certain railroads are losing substantial amounts of their carrier revenue by investments in warehouse facilities designed to meet competition and increase the volume of traffic, according to the conclusion of the report. The practices in the New York Port District are specifically mentioned as inimical to the best interests of the carriers. Commissioner Mahaffie quotes the president of one of the trunk lines, which had more than $8,000,000 in warehouses in the New York district, who testified as to the low charges prevailing as follows: "I don't think anyone can say that there is any money to be made out of this,—there is no use to beat around the bush, this storage over here does not pay its way."

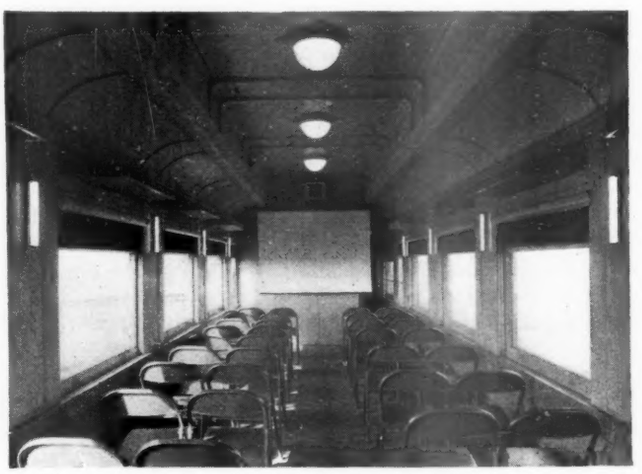
Would Scrutinize "Outside Investments"

The Interstate Commerce Act, as it now stands, provides that railroads must get the permission of the commission only when they desire to get control of another railroad and does not prevent them from acquiring as many holdings as they have funds for as long as control is not obtained. Also the law makes no provision for commission scrutiny in the cases where railroads acquire other than railroad properties except in the cases of acquisition of motor carriers which comes under the Motor Carrier Act of 1935. The commission feels that it should be given jurisdiction so that it may determine whether or not these "outside investments" are in the public interest and constitute a proper use of railroad funds or credit. This rule, the commission feels, should apply equally to subsidiaries. The reserves and surplus funds which are awaiting use, should, however, be available for the production of income. "In order that this may not be impeded," the report says, "there should be exempted from such restrictions investments such as are permissible for savings banks and trustees."

Commissioner Splawn wrote a short concurring opinion in which he asserted that "this report is an illuminating summary of the effects upon the New Haven of an attempt prior to 1913 to achieve monopoly of transportation in New England." He concluded by saying that the facts in this investigation point to the conclusion "that a non-carrier corporation should not own or vote the stock of a common-carrier company without the approval of the commission after applying tests of the public interest specified by law, and that a common-carrier corporation should not be permitted to acquire the securities of another transportation company without a finding by the commission that such acquisition would be in the public interest."

Electro-Motive Instruction Car

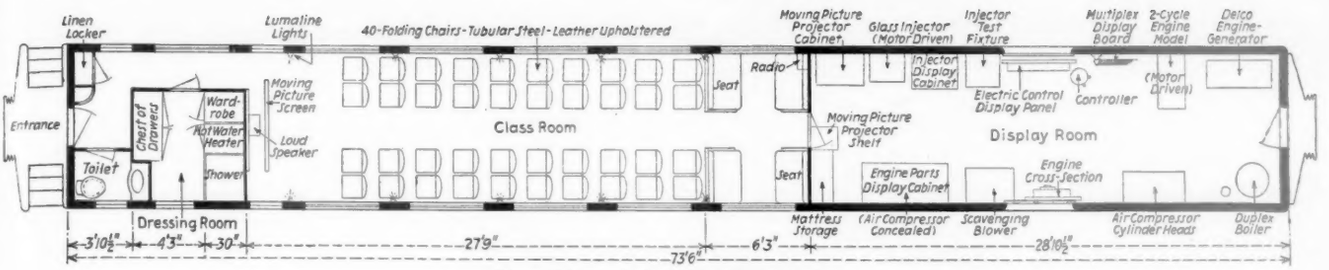
WITH a view to helping the railroads instruct their employees in the principles of Diesel locomotive construction and operation, the Electro-Motive Corporation recently outfitted a Diesel locomotive instruction car which has already been used on a number of roads with highly satisfactory results. Combining sound motion pictures, displays and lectures, the instruction course offered on this car brings the fundamentals of a new type of power to the men who operate and maintain Diesel equipment.



The Classroom Equipment Includes a Silver Screen, a Loud Speaker and a Sound Projector

The 73-ft. steel car provides a 32-ft. classroom with seats for 44 men, a 28-ft. display room with models and cross-sections of important locomotive parts, and living quarters for two instructors. The steel construction of

Car Equipped to Instruct Railroad Men in the Principles of Diesel Locomotive Construction and Operation



Floor Plan of the Instruction Car

the car makes it possible to dead-head the car in any passenger or mail train.

Designed to be entirely independent of yard facilities, the car is equipped with a vapor duplex hot-water heating system operated on either steam or Diesel fuel oil, a 110-volt d.c. Delco lighting plant with batteries consisting of 56 cells, Exide type MVAH-25, a Gardner-Denver motor-driven air compressor to furnish air to the display panels, and a gas heater to heat water for the shower and lavatory.

The classroom has 40 tubular steel folding chairs, leather upholstered. A modern note has been added by Lumaline side lights combined with conventional ceiling lights. A rheostat allows gradual dimming of the lights for motion picture projection. A silver screen and loudspeaker at the front of the room and a Bell & Howell Model-138 sound projector mounted behind the rear partition convert the classroom into a motion picture theater.

The display room contains cabinets and panels for displaying the important locomotive parts. A cross-section of the two-cycle Diesel engine shows the details of engine construction. An electrical display panel has been wired to a standard control station so that enginemen may operate the throttle and watch the various contactors operate exactly as they do in the locomotive. A motor-driven glass injector, injector test fixture, and cross-sectioned injector show the operation of the fuel injectors in the engine. A model of the two-cycle engine driven by a motor gives a visual picture of the operation of the engine by means of lights concealed behind a translucent cylinder. A scavenging blower has been mounted and cut to show the helical lobe rotors. Rotating the rotors demonstrates the discharge principle of the positive displacement blower. Air compressor cylinder heads, engine governors and miscellaneous parts complete the displays.

Living quarters for the instructors, furnished by the Electro-Motive Corporation, include berths, a radio, linen storage and a dressing room with cedar-lined wardrobe, chest of drawers, and a shower bath.

The instruction course is offered for firemen, engineers, machinists, and car men. Beginning with a sound motion picture which explains the principle of the two-cycle Diesel engine, lectures describe train handling, locomotive construction, maintenance of Diesel engines and auxiliary equipment, electrical transmission and control and general operation of the Diesel locomotive. Unusual interest has been shown in the classes. Over 400 men have been in attendance in a single week.

In the Display Room Are Cut-Away Models of Diesel Engine Parts and Control Equipment

Reduced South-C.F.A. Refrigeration Charges

WASHINGTON, D. C.

REDUCED charges for standard refrigeration service on fruits, vegetables, berries and melons from points in Florida, Georgia, South Carolina, North Carolina and Virginia to destinations in Central Freight Association territory, including the Buffalo-Pittsburgh zone, are prescribed by the Interstate Commerce Commission in a decision made public on May 7. The report in No. 17936 also embraces a complaint (No. 24984) of certain Florida shippers who are found to have established a basis for reparation awards on shipments moved since January 12, 1930.

The prescribed adjustments which become effective June 24 produce reductions ranging from $1 per carload for fruits (except apples) from Virginia group B points to West Virginia destinations, to $24.50 per carload for berries from Florida group B points to destinations in Ohio's group 1. A tabulation in the report sets up in adjacent columns the present tariff charges and the prescribed charges for the future. The latter, for example, bring reductions of $6 and $8 per carload on shipments of citrus fruits and vegetables moving from Florida group B points to destinations in West Virginia, Pennsylvania, Illinois, Missouri, and parts of Indiana and Ohio; a $9 reduction applies to some points in the latter two states as well as to points in Kentucky. Reductions amounting to $12.50 per carload apply to Wisconsin and Iowa. A similar table is included for each of the origin territories, analogous reductions resulting in each instance save in a few where present charges remain undisturbed and in that of vegetables from South Carolina group A points wherein the adjustments bring increases ranging up to $8 per carload.

The present investigation resulted from a reopening of the proceeding in which a previous order, effective May 15, 1929, required adjustments of standard refrigeration charges on traffic moving from the same origin territories to destinations in Trunk Line and New England territories. In this previous report the commis-

sion restricted its findings to those two territories, but said that "it would not be difficult for respondents to adjust their charges for other forms of refrigeration service and to destinations in central territory in line with our findings, and they should do so." The railroads, however, were of the opinion that "they lacked sufficient data to enable them to comply" with these directions, and took no action. Thus, upon representations made by shippers, the proceeding was reopened by an order dated December 1, 1931. Hearings were postponed until 1935, pending completion of the nation-wide investigation of refrigeration charges covered in No. 20769. The report in the latter case was reviewed in the *Railway Age* of July 18, 1936.

Findings in the present report are based to a large extent on precedents established and principles developed in the general investigation, the aim being to "determine the costs incurred by or on behalf of the carriers in connection with refrigerated shipments which would not be incurred in the course of transportation if the shipments were not under refrigeration." From this statement of purpose the report proceeds to scrutinize the various elements entering into the total cost of icing cars.

Among the items thus considered to build up the cost of ice were the interest on investment in icing facilities, an allowance for depreciation, taxes and supervision. Further allowances were made for the cost of hauling the ice in the bunkers of refrigerator cars, switching of cars to and from ice docks, bunker repairs, loss and damage and, station and auditing expenses. Upon consideration of the unit costs thus determined the adjusted charges were set up.

The complainants in the reparation case relied largely upon the costs found in the first report in the proceeding and upon the commission's statement therein to the effect that the carriers should readjust their charges for refrigeration service to destinations in central territory in line with the report's determinations as to Trunk Line and New England destinations. The carriers on the other hand contended that the commission's statement relied upon by the complainants was not a finding as to what would be reasonable charges to destinations in central territory, that it was not possible to revise charges to that territory without a thorough cost study, and that costs developed in the present investigation prove that the charges assailed have not been unreasonable. The commission rejects these contentions of the railroads and finds the complainants entitled to reparation, based however, "on charges that would have resulted from the application of the costs as determined in the first report . . . . rather than the charges here prescribed for the future."

Commissioner Mahaffie, in a brief partial dissent in which Commissioner Lee joined, agreed with the majority's findings as to charges for the future, but he was not convinced that there was justification for awarding damages on account of past transactions.

IN WHAT THEY BELIEVE to be the world's first installation of microphones in railway dispatchers' telephone systems, the Telephone and Telegraph division of the Victorian (Australia) Railways are substituting this type of transmission apparatus for the standard breast-telephones. The decision for the change results from experiments pursued by W. R. David, assistant engineer of the division, in which he found that the use of microphones would overcome the interference and limitation of amplification which the loudspeaker (receiving) apparatus exerts upon the telephone transmitters now in use.

Communications . . .

The Railway Age cannot publish letters from readers who do not supply their names and addresses. Names of correspondents are not published, or disclosed even upon inquiry, unless the correspondent consents. But they must be given us as an evidence of good faith.

Air Line Propaganda

BOSTON, MASS.

TO THE EDITOR:

I noticed the very vicious campaign being carried on by the air lines against the railways, in fact a recent issue of the *Railway Age* quoted some air line as claiming that some five thousand persons were killed on the railways last year, the implication being that they were passengers, when as everybody knows scarcely any passengers whatever were killed in train accidents in 1935 or 1936.

Recently I was informed that before a passenger can travel in a commercial plane, he must sign some paper, releasing the air line from all liability for any injury, including death. Is this true?

I think that the railways have got to learn to "fight fire with fire" and not hesitate to capitalize on the all too numerous accidents that air lines suffer, both domestic and foreign Also the railways should point out the large amounts of money being spent on the air lines by governments, both federal and local. The usual argument is that the air lines are required for military purposes, and it is unfortunate how many otherwise intelligent people will accept this shallow argument.

I am a shareholder in two railway companies, and my father is a shareholder in four railroads and most of my clients own stocks and bonds in railways, and the attitude of the air parasites is, to state the case mildly, very irritating. Most of the propaganda that they disseminate is difficult to describe in moderate language.

I read the *Railway Age* every week, and I think that it is doing a wonderful work on behalf of the railways, particularly in explaining the question of competition.

GEOFFREY SPURR.

First U.P. Streamliner Not Diesel Powered

TO THE EDITOR:

My attention has been called to an error in my paper before the Central Railway Club which you printed in abstract in the April 3 issue of the *Railway Age*. The statement in question reads: "The most striking recent changes in railroading, and certainly the most highly publicized, were the advent in 1934 of the Diesel-powered articulated streamlined trains on the Union Pacific and the Burlington, the first built by the Pullman-Standard Car Manufacturing and the second by the Edward G. Budd Manufacturing Company."

As the first Union Pacific streamline train was not Diesel powered, a correction of this statement should be printed.

W. M. SHEEHAN,
Manager, Eastern District Sales,
General Steel Castings Corporation.

[A similar error appeared on page 17 of the January 2, 1937, issue of the *Railway Age* in a table entitled "Streamlined or High-Speed Trains" in which the City of Salina, the first such train built for the Union Pacific, is credited with Diesel motive power. This train was built with a distillate-burning engine which employs a carburetor for introduction of the fuel into the cylinders.—EDITOR.]

New Books...

Modern Railway Welding Practice, by O. Bondy. 128 pages. Illustrated. 8½ in. x 5½ in. Cloth binding. Published by The Railway Gazette, 33 Tothill Street, S.W.1., London, England. Price 5s. net.

The book originated in a series of special articles published in The Railway Engineer and The Railway Gazette. Rather than being concerned with welding technique, it deals with railway practices in which welding has given satisfactory results. Examples are drawn largely from German practice. After a general survey of the subject, Chapters 2 to 4 deal with the application of welding to rolling stock. Chapter 5 is devoted to welding regulations in various countries, with particular reference to those of Germany. Then follow chapters on welded railway station roof structures and bridges and the strengthening of bridges. There is also a chapter on the welding of rails.

The Railway Mania and Its Aftermath 1845-1852, by Henry Grote Lewin. 500 pages, 5¾ in. by 8¾ in. Bound in cloth. Published by the Railway Gazette (London). Price 12 shillings.

This ambitious book is a complete presentation of English railroad growing-pains from 1845 to 1852. So rapidly were new organizations formed and lines built during this brief period that the author has found it necessary to supply a separate system map for each year. As compiler of material the author has found his task rather difficult, for these years were undoubtedly the liveliest in transportation history. His work is replete with details of legal complexities, organization proceedings, route plotting. Nor does he limit himself to the political and legal aspects of the mania of building and merging, for many intimate details of train service and traffic developments are presented. His treatise will be valuable to four classes of readers (overlapping of classification permitted) : 1. The historian of railroads who yearns for detail. 2. The economist who seeks information on stock promotion and corporate practices of the past. 3. The student of train operation. 4. The government control enthusiast who is looking for historical proof of his thesis.

An Engineer's Recollections, by John F. Stevens, civil engineer. 6½ in. by 9½ in. 70 pages. Bound in paper. Reprinted from Engineering News-Record, published by McGraw-Hill Publishing Company, Inc., New York. Price $1.

In this discoursive little biography, John F. Stevens, famous for his building of Western and Canadian railways and his work as the chief civil engineer on the Panama Canal, presents a treasure-trove of mature judgments and evaluations which proceed from a varied experience. Not only does he relate the thrills and hardships of his work in locating the Canadian Pacific through the "water-holes" of Saskatchewan and the impressive tale of his discovery of Marias Pass, where James J. Hill's Great Northern trains might conquer the Rockies, but regales the railroad operating officer with ripe hints on personnel and staff-relations problems gleaned from his experience as general manager of the Great Northern and as special advisor in the modernization of the New Haven. As a penetrating student of operating problems, Mr. Stevens offers wise advise for the guidance of future railroad policies. Of real value is his remark, for example, that it is a mistake to leave the "vital function of carrying on the operation" to subordinates while those with authority occupy themselves with "what are generally but erroneously considered the larger problems of railway administration." Equally useful are his indirect suggestions for economies and efficient organization.

It is an experience to follow the details of this rail pioneer's search and discovery of a long-sought pass through the northern Rockies and the hardships he endured in survey work in virgin territory. It is equally inspiring to sit at the feet of a master executive and to feel that great things can be done with men. The juniors of the engineering clan will benefit particularly from his last chapter, so aptly entitled, "To the Young Engineers Who Must Carry On," for herein they will find expressed his pleas for strenuous technical education, for personality cultivation, and for faith.

Odds and Ends...

Switchman—Artist

John Adams, switchman for the Southern Pacific at Roseville, Cal., is also an artist, the only one of his kind in the world. Adams makes sand pictures in bottles, using a wide variety of colored sand and achieving some remarkable effects. So unusual is his hobby that it has been recorded in the movie series "Strange As It Seems."

Kodiak Bears

George R. O'Neill, chief clerk to the superintendent of freight claims and police of the Pere Marquette, claims to be the only railway man to have brought down one of those giants of the Alaskan wilderness, a Kodiak bear. O'Neill goes even further than that, he has bagged four of the monsters, and, if report is to be believed, he got three of them each with one shot. The fourth one, it is said, nearly got him.

Commissioners Honored

When the Alton built is 34-mile cut-off between Springfield, Ill., and Murrayville, in 1905-1907, the seven stations on the new line were named after seven contemporary commissioners of the Interstate Commerce Commission. Four of the names still survive, thirty years later, in Cockrell, Knapp, Prouty and Clements, named after F. M. Cockrell, Martin A. Knapp, Charles A. Prouty and James C. Clements.

Rhodes Scholarships

There are very few railwaymen whose sons have won Rhodes scholarships, entitling them to a three-year course in Oxford university, England, but Don K. Price, superintendent of the Louisville & Nashville at Latonia, Ky., has had two sons win this honor. His elder son, Don K., Jr., won the award in 1931, and his youngest son, Karl, now a sophomore at Yale, won the honor this year and will enter Oxford next fall.

All-Round Man

G. J. Hardwick, now ticket accountant for the Missouri-Kansas-Texas at Waco, Texas, claims a record for the number of different jobs held with the same railway. Starting with the Katy 24 years ago, Hardwick has since held 13 different jobs, in 6 different departments. He has been clerk in the auditor's office, trucker, warehouse clerk, yard clerk, interchange clerk, night chief clerk, day chief clerk, brakeman, night freight clerk, relief yardmaster, dispatcher and ticket accountant.

Great-Grandfathers

M. S. Connors, assistant to vice-president of the Chesapeake & Ohio, came to the conclusion that, in these days of small families and hurried living, great-grandfathers were becoming unusual, so he has decided to form a Gread-Grandfathers' Club on the C. & O., to honor all who have achieved that distinction and to discover, if possible, which railwayman can claim the distinction of having the most great grandchildren. Mr. Connors does not personally claim the honor, he having only one great grandchild.

Sausage Cars

The sausage is the latest commodity for which the Great Western of England has designed and constructed special vehicles. Two insulated cars have just been built at the company's shops. Each has six wheels, is vacuum fitted and fully equipped for operation on fast passenger trains. The roof, sides, end and floor are insulated with cork to a thickness of two in. The walls are lined with a hygienic covering and the floors with a fireproof material. Each van has its own electrical unit which operates the interior lighting and an electric fan which draws air into the van over an ice tank and maintains, through a duct, a free and even circulation. The circuits are so arranged that when the doors are closed the fan is operated and the lights switched off but the opening of a door will stop the fan and switch on the lights. A master switch enables this to be varied if required.

NEWS

Introduce Railway Retirement Bills

New proposal presented in Senate by Wagner and in House by Crosser

The new railroad retirement bill, which with the pending tax bill is designed to set up the pension system agreed upon in the recent management-labor compromise, as modified by the tax increase demands of the U. S. Treasury, was introduced in the Senate on May 11 by Senator Wagner of New York. A similar bill was presented in the House of Representatives by Representative Crosser of Ohio. In offering the bill Senator Wagner expressed his gratification "at the agreement between the workers and the railroads which has resulted in this bill." He called the accord "another sign that we are reaching the industrial stage of peace instead of strife."

The Senate bill was accompanied by an explanatory statement which outlined the major changes proposed in the present law. The sponsor explained that "like all compromises it does not contain all that both sides would desire," adding that it does not contain all that he would like to see "incorporated in legislation of this kind." The explanatory statement summarized the proposed changes as follows:

1. The bill broadens the coverage of the act so as to include groups not included in the present act.
2. The bill broadens the definition of "employment relation" so as to include persons absent on account of sickness and disability who are not "ready and willing" to return to service.
3. The bill changes the age from 50 to 60 when an employee under 65 with 30 years of service may retire with a reduction of one-fifteenth for each year he is under 65.
4. The bill permits a person who is permanently disabled to retire at 60, although having less than 30 years of service, with a reduction of one-fifteenth for each year he is less than 65. This provision is not in the present act.
5. The present act requires a person to retire at 65 or suffer a loss of one-fifteenth of his annuity for each year he continues in service after that age unless he files with the Board a written agreement of the carrier each year for his continuance in service; and it further provides, unconditionally, that he shall suffer a reduction of one-fifteenth of his annuity for each year he continues after 70. The bill contains no such provision, but provides that service of a person 65 years of age or over who continues in service after July 1, 1937, shall not be added to his years of service. It further provides that his compensation received after July 1, 1937, shall be disregarded in calculating his annuity if to include it would diminish his annuity.
6. The present act limits the "years of service" to 30, whether prior or subsequent or both, thus limiting the annuity to $120, whereas the bill has no limit on service after January 1, 1937.
7. The present act has no minimum annuity whereas the bill provides for a minimum as follows:

"For persons with 20 years of service who are employees when attaining age 65, the minimum is $40, provided that if the monthly compensation is less than $50, the annuity shall be 80 per cent of the monthly compensation except that if the 80 per cent is less than $20 the annuity shall be $20, or the same amount as the monthly compensation, whichever is less. It is further provided that in no case shall the value of the annuity be less than the value of the old-age benefit he would receive under title II of the Social Security Act if his service as an employee after December 31, 1936, were included in the term employment as defined in the Social Security Act."

8. The present act provides for the payment upon the death of a person receiving or eligible to receive an annuity of an amount equal to one-half of 1 year's annuity. It provides no death benefit in the case of a person who dies before becoming eligible for an annuity, whereas the bill has a provision applicable to all employees regardless of the time death occurs allowing as death benefit a sum equal to 4 per cent of the aggregate compensation after January 1, 1937, less the amount paid as annuities to the employee or spouse.
9. The bill has a section contemplated and planned for but not contained in the present act, which provides for the taking over of pensioners on the carrier's private pension rolls, and the payment to them of the pensions in the amount originally granted by the carriers, thus restoring the reductions made since 1930.
10. The present act allows prior service to a person who is an employee on enactment date (Aug. 29, 1935) or who is in the service of any railroad at any time thereafter for any length of time, whereas the bill provides that in order to be entitled to prior service, a person must be in the service or in employment relation, or totally and permanently disabled on the enactment date and on the date he become eligible for an annuity.

The Senate bill (S2395) was referred to the committee on interstate commerce while Representative Crosser's bill (H.R. 6956) went to the House committee on interstate and foreign commerce. Hearings on the bill were expected to be held before the end of this week.

"Super Chief" Makes Second Trip

The second trip of the "Super Chief," new streamlined train of the Atchison, Topeka & Santa Fe, was made on May 8, when 65 members of the Chicago Association of Commerce left Chicago for Los Angeles, Cal., where they were entertained by the Chamber of Commerce of that city. On the return trip, the train was to carry a Los Angeles delegation to be given a reception in Chicago by its Association of Commerce. The first trip of the train was made on May 3 from Chicago to Santa Fe, N. M., returning on May 6.

More Commodities Withdrawn from Ex Parte 115

Additional groups of commodities have been presented for withdrawal from the general Ex Parte 115 rate case, according to a letter sent last week by R. V. Fletcher, vice-president and general counsel of the Association of American Railroads, to Interstate Commerce Commissioner Aitchison. The groups, on which the carriers propose to file tariffs effective May 29 and June 20, include children's vehicles, pianos, wooden furniture stock in the rough or in white, wooden chairs in white and phonograph cabinet parts.

Railroad Finance Hearings Resumed

Wheeler's probers look into sale of Midamerica and C. & E. I. transactions

With the new men in control of the Van Sweringen "empire," Robert R. Young, Allan P. Kirby, and Frank F. Kolbe, on the witness stand, Senator Wheeler held hearings of his subcommittee investigating railroad financing on May 6, 7, and 10. During these sessions Senator Wheeler was primarily interested in finding out just who purchased the control of the holding company empire from the George A. and Frances Ball Foundation. The three new owners of the Midamerica stock seemingly convinced Senator Wheeler that they were the real purchasers and that they had not been acting for any other interests. During the hearings it was revealed that for a time the General Motors interests were dickering with Mr. Ball relative to the purchase of the stock, but after the group had consulted with Senator Wheeler and had ascertained that he would investigate them if they were to make the purchase, they decided to forego the opportunity to acquire control of this large group of varied interests.

An interesting feature of the hearings was the readiness of Mr. Young to agree with Senator Wheeler that the complicated holding company structure should be simplified. Mr. Young even agreed that it would not be a bad idea to pass legislation on this subject. The new owners testified that they were now working on a plan for simplification of the structure which would eliminate the Chesapeake Corporation by consolidating it with the Alleghany Corporation. This would be done by offering to the Chesapeake Corporation stockholders a new Alleghany preferred, which would be convertible for a short period into Chesapeake & Ohio stock. The new owners also said that they felt that the company was too much pyramided now and that they hoped to enlarge the base of the ownership so that it would be in more hands. They also told Senator Wheeler that they had no intention of remaining in active control of the new properties for any extended length of time, but that their only objective was to simplify the structure and attempt to put the properties on a paying basis. Mr. Young, in discussing the advisability of having the Interstate Commerce Commission pass upon new plans for reorganization of the Midamerica group, said that as soon as they had

worked out a feasible plan, they were going to offer it to the commission for its approval, even though they felt that they were not required to do so by law. The new owners were frank and open in their answers and seemingly made a good impression upon the committee.

The hearing on May 10 was devoted entirely to making corrections in the record in regard to the testimony of the Guaranty Trust officials who had testified as to their part in the financing of the Van Sweringen holding company structure. A great deal of discussion centered around the question of whether land trust certificates should be carried on the balance sheet as liabilities or considered as income which would be taxable. Committee officials contended that the Cleveland Terminals Building Corporation, a Van Sweringen real estate company, had made a profit of $7,000,000 in the sale of land trust certificates and that it had not paid the government the income tax due on the sale. Mr. J. J. Anzolone, treasurer of the Cleveland Terminal Building Corporation, testified that the item had been carried as a debt or liability which would make it exempt from the tax. The committee holds that this company now owes the government $1,605,319 on this sale.

On May 11 Senator Wheeler's committee began its investigation into the finances of the Chicago & Eastern Illinois and called as its first witness Herbert Fitzpatrick, vice-president in charge of law for the Missouri Pacific and the Chesapeake & Ohio. Senator Wheeler immediately began questioning Mr. Fitzpatrick regarding the acquisition of the C. & E. I. by the Chesapeake & Ohio. It was brought out that the C. & O. acquired a majority of the common and preferred stock of this company through the brokerage firm of Paine, Webber & Co., who acquired it from the estate of Thomas F. Ryan. Senator Wheeler asked Mr. Fitzpatrick why the C. & O. had not acquired the stock directly from the estate. The witness could not give a satisfactory answer, as neither could Mr. Potter of the Guaranty Trust Company and Francis Paine of Paine, Webber & Co. Senator Wheeler later went on to show that Paine, Webber & Co. were used as a "dummy" to acquire the stock so that the deal would not have to be reported to the Interstate Commerce Commission. Later Senator Wheeler accused the C. & O. of "forcing" the commission to approve the acquisition of the C. & E. I. and approving the allocation of this property to the C. & O. as a part of its holdings in the Four Party consolidation plan. He introduced evidence which showed that the C. & O. had signed an option contract which would hold Paine, Webber & Co. harmless if the C. & O. did not take the stock of the C. & E. I. Senator Wheeler said that he felt that the commission should refuse to sanction any option contract which railroads might make, as they were nothing more than a means of evading the law. Since the C. & O. was committed to taking the stock and had virtually purchased it, Senator Wheeler said that the commission felt that it had to sanction the purchase or force the C. & O. to divorce itself of the stock and thus throw it on the market with a resulting heavy loss to the C. & O. stockholders.

In commenting on what he considered a violation of the law, Senator Wheeler told Mr. Fitzpatrick, "In my judgment, this deal was a plain violation of the spirit of the law." "It is useless to pass laws if you railroad executives are going to violate them."

Most of the afternoon session on May 11 was devoted to an examination of the C. & E. I. transaction. The C. & O. paid out to the brokerage house of Paine, Webber & Co. $5,000,000 of the stock's $8,000,000 price, and carried the amount thus disbursed as a "special deposit" among its current assets. Senator Wheeler called the transaction identical with one between the Missouri Pacific and Terminal Shares, Inc., which he had previously looked into, and further characterized it as a "fictitious entry." But Mr. Fitzpatrick, disclaiming a knowledge of accounting, would "neither justify nor criticize" the entry.

At another point in the proceeding Senator Wheeler said that in the handling of the entry "the facts were concealed, because you were taking over control of a railroad and you didn't want the I.C.C. to know it." The "special deposit" of $5,000,000, he added, was really an investment in C. & E. I. stock which was declining at the time.

Turning to the Virginia Transportation Corporation's part in the C. & E. I. acquisition, Senator Wheeler presented as an exhibit the memorandum of an October 2, 1931, telephone conversation between Mr. Fitzpatrick and John P. Murphy, secretary of Alleghany Corporation. This memorandum detailed a plan whereby the Virginia Transportation Corporation would take over the C. & O. purchase option as to something more than 40 per cent of the C. & E. I. stock held by Paine, Webber & Co., and at the same time make a contract with a "third party" to which Virginia Transportation Company would loan $500,000 for the purpose of taking the remaining C. & E. I. shares off the brokers' hands. The Cleveland Stevedore Company was pressed into service for the latter purpose. When Senator Wheeler asked Mr. Fitzpatrick if he thought "the law should be evaded in this way" the witness replied that since it was illegal to hold more than 50 per cent of a railroad's stock, a third person had been set up to hold the marginal shares. After further discussion as to the propriety of the transaction, Senator Wheeler declared, "If you lawyers can go around and evade the law then we may as well abolish the Interstate Commerce Commission." When the witness observed that the I.C.C. is "a fine body," the senator retorted that "it's not worth a nickel if this can go on."

Mr. Fitzpatrick protested that he was not trying to say that the situation was "ideal" but he nevertheless held that the "protective steps" were rendered necessary at the time they were taken. Whereupon Senator Wheeler closed the discussion with the further observation that "If the I.C.C. lets railroads get away with this sort of deal, I would just say that we ought to have a new commission down there."

The hearing on May 12 was confined largely to a discussion of the $700,000 loan which the C. & E. I. obtained from the Midland Bank of Cleveland, on October 28, 1931. It was disclosed that this money was, in reality, loaned by the C. & O., using the bank as a "dummy" so that the public would not know that the C. & O. was attempting to stave off bankruptcy for the C. & E. I.

Eastern Car Foremans' Annual Outing

The Eastern Car Foremans' Association will hold its annual field day and golf tournament on Thursday, July 15, at the Race Brook Country Club, New Haven, Conn.

Signal Section Announces 1938 Meeting

The Signal Section, Association of American Railroads, will convene in annual meeting at the Roosevelt Hotel in New Orleans, La., on April 5-7 of 1938, according to an announcement by R. H. C. Balliet, secretary.

Runaway Wrecks C. N. Express

The Montreal-Halifax express of the Canadian National collided with a runaway cut of hopper cars at Springhill Junction, N. S., on May 5, killing at least four persons, according to local reports. The two victims able to be identified, both employees, were the engineer and an express employee.

Railroad Employment in April

Class I railroads, excluding switching and terminal companies, had 1,130,351 employees in April according to the Interstate Commerce Commission's compilation based on preliminary reports. This represents an increase of 7.68 per cent over April, 1936, and 2.6 per cent over March of this year. The index figure for April, based on the 1923-25 average as 100, stands at 63.3.

B. & O. Veterans' Annual Meeting

The Grand Lodge of the Baltimore & Ohio Veteran Employees Association and the Ladies Auxiliary were to hold their annual meeting Friday and Saturday, May 14 and 15, at the Rennert Hotel, Baltimore, the speakers including Daniel Willard, president of the road, and C. W. Galloway, vice-president of operation and maintenance.

Air Traffic in March

Scheduled air lines operating in continental United States carried 74,972 passengers and 580,602 lb. of express in March, according to reports received by the Bureau of Air Commerce, U. S. Department of Commerce, from the 20 companies operating during that month. In March, 1936, a like number of companies carried 70,926 passengers and 535,736 lb. of express.

Eksergian Honored

Among the recipients of medal awards for the year bestowed by the Franklin Institute, Philadelphia, for contributions to science is Dr. Rupen Eksergian of the Edward G. Budd Manufacturing Company,

who will receive the George R. Henderson medal "in consideration of his contributions to railway engineering and his accomplishments in the field of railway locomotive and car design."

Shippers Advisory Board June Meetings

Five of the Shippers' Regional Advisory Boards have definitely announced their June meetings. The schedules follow: Southwest board—Dallas, Texas, June 3; Ohio Valley board—Indianapolis, Ind., June 8; Trans-Missouri-Kansas board—Wichita, Kan., June 9; Allegheny board—Cambridge Springs, Pa., June 10-11; Pacific Coast board—Los Angeles, Cal., June 25.

"Dixie Line" Repeats Farmers' Aid Program

The "Soil Improvement Car," operated through the co-operation of the Nashville, Chattanooga & St. Louis and the Agricultural Extension Service of the University of Tennessee, has commenced another trip through Tennessee, J. A. Senter, industrial agent for the road, announces. This car, as described in the *Railway Age* of August 22, 1936, page 293, last year made lime and phosphate tests of soils submitted by 341 farmers.

Commercial Zones of Chicago and St. Louis

The Interstate Commerce Commission has postponed to June 5 the effective date of its orders prescribing boundaries of commercial zones for Chicago and St. Louis wherein motor vehicle operations will be exempt from regulatory provisions of the motor carrier act, other than those relating to maximum hours of service of employees and safety of operation or standards of equipment. A similar postponement in the New York City case was previously announced.

L. M. S. to Build 85 New Locomotives

The London, Midland & Scottish of Great Britain has placed orders for the construction of 85 new steam locomotives, according to the New York office of the Associated British and Irish Railways. Apart from five 4-6-2 engines to be built for the new high-speed express service between London and Glasgow, the new locomotives will comprise 15 standard six-coupled freight engines, 0-6-0 type, and 65 standard passenger tank engines, of a 2-6-2 wheel arrangement, for suburban service.

New Headlight on "400"

A new type headlight, which casts a gyrating beam of light in the shape of a figure eight, is being given its initial tests on the "400" of the Chicago & North Western, operating between Chicago and the Twin Cities. The new light, known as the Mars light, is of 3,000,000 candle power, and its reflector is oscillated by a motor which causes the beam to swing in arcs similar to a figure eight. The field of gyration of this figure eight is about 800 ft. in diameter at a distance of 1,000 ft., and precedes the locomotive a distance of 1,400 to 2,000 ft. The light is canary yellow in color and in yard tests it has been observed at a distance of three miles. The light itself is located on the top of the smoke box directly in front of the stack, which places it directly above the regular headlight. The light is expected to be of value as a warning signal when a train approaches crossings.

Rail Link Will Tie Chile with Argentine Lines

Through rail connections will be effected between Santiago, Chile, and any point on the Argentine state railways, should plans now under consideration by the Argentine government be carried out as a part of the recent decision to acquire and rebuild the Transandine line. According to consular reports, the plans call for a branch line of 20 kilometers (12.4 miles) to connect the Transandine with the Mendoza to Pie de Palo extension of the Argentine state system.

Scenic Limited to Have Air-Conditioned Tourist Sleepers

Air-conditioned tourist sleeping cars will be added to the consist of the Scenic Limited of the Missouri Pacific on May 15. With the addition of these cars, the train will provide three classes of service between Kansas City, Mo., and San Francisco, Cal., including coaches with sponge-rubber cushioned seats which recline and revolve and lounges for coach travelers; tourist cars which operate by way of Denver, Colo., and the Moffat tunnel; and standard sleeping cars. Three meals a day for 90 cents are also featured.

Allotments of Rivers and Harbors Funds

Secretary of War Woodring made public on May 8 allotments of funds aggregating over $400,000 for various river and harbor improvements. The largest amount—$200,000—was for "maintenance dredging and repairs to existing dikes and revetments in the Missouri river, Kansas City to mouth." It is pointed out in this connection that commercial traffic on the Missouri to and below Kansas City, exclusive of ferry traffic, has during the past five years averaged 882,820 tons per year.

An allotment of $45,115 is made to the Mobile, Ala., district for continuing the survey for a waterway connecting the Tennessee and Tombigbee rivers, while the Black Warrior, Warrior and Tombigbee rivers get $20,000 for certain authorized work in connection with the extension of slackwater navigation some 60 mi. into coal fields on Sipsey, Mulberry and Locust forks. A sum of $42,900 is to be spent for dredging to restore the Mississippi's southwest and south pass channels in Louisiana to authorized project depths of 35 and 30 ft. respectively.

Chairmen of Outing Committees, New York Railroad Club

The chairmen of committees in charge of the various activities in connection with the Annual Outing and Golf Tournament, Field Day and Dinner, of the New York Railroad Club, which is to be held on Tuesday, June 8, at the Westchester Country Club, Rye, N. Y., has been announced as follows: Charles A. Gill, president of the club, is honorary chairman; Samuel F. Pryor, Jr., is general chairman; J. E. Davenport, assistant general chairman in charge of golf; and Ken Auburn, assistant general chairman in charge of games. D. W. Pye is chairman of the general committee and Arthur N. Dugan, vice-chairman of that committee. Other committee chairmen are E. A. Jones, attendance; Frank Hedley, reception; C. E. Bryant, Jr., golf; George Flatow, publicity; Samuel MacClurkan, out-of-town; and C. G. Melvin, transportation.

1,000 Car Order to Require Opening of A. C. F. Plant

Following receipt of an order for 1,000 ballast cars, which will be built for the Rodger Ballast Car Company for delivery to the Union Pacific, the American Car & Foundry Company will reopen its plant at Madison, Ill., on a large scale for the first time in seven years. The wheel department of this plant was reopened about three months ago and employs about 125 men. About 700 more men will be needed for the car department.

Milwaukee Salesmen to See What They Sell

In order to increase the patronage of dude ranches and travel through the west, the Chicago, Milwaukee, St. Paul & Pacific will assemble its passenger agents located in eastern and midwestern cities for a staff meeting in its Gallatin Gateway, Mont., inn, at the northern entrance to Yellowstone National Park, and conduct them on tours through the west. The purpose of the meeting and tours, which will be held the latter part of May, is to familiarize the salesmen with the country served by the Milwaukee so that the personal contacts and knowledge gained by the representative will enable him to render better service to prospects.

Report of South African Transport Conference

A 300-page verbatim record of the Southern Africa Transport Conference, which was held in Johannesburg in September, 1936, has been published. It contains the details of discussions of rail, road, and air transportation by leading officers of those industries in South African territories. In the railroad sections, interest centered mainly on the question of road competition and co-ordination, publicity, and modernization through air-conditioning and improved refrigeration methods. Technical discussions were concerned largely with developments in weight reduction, electrification, and increased length of rails by welding.

Important resolutions were adopted for consideration by the various countries participating in the conference. The delegates agreed that the "most suitable railway gauge for Southern African conditions, physical and financial, is the 3 ft. 6 in. gauge" and suggested that the design

of new rolling stock be adjusted to permit use in the event of a change to uniformity. They voted that a Permanent Secretariat be set up to deal with African transport problems and moved that similar conclaves be held in the future at suitable intervals. Among the declarations of policy submitted in the report was the resolution "that the existing long-established world-wide railway policy of charging high rates for valuable traffic and low rates for primary products is essential to stimulate and maintain primary production; that this policy is seriously imperilled where uncontrolled competition with the railways by other forms of transport is allowed; that having regard to what is stated above, a scheme of control of transport is necessary in the best interests of any country."

A.A.R. Issues June Safety Posters

The Safety Section of the Association of American Railroads has chosen "Don't bet your life" as the theme for the June installment of its safety program. The circular (S-530) illustrates pictorially and verbally the diverse ways in which employees gamble their lives—and lose; the poster (167) pictures the age-old gamble taken in stepping between moving cars for the purpose of completing an uncoupling job. The caption blazons the warning that "thousands have lost this bet." In issuing these publications, the committee on education, L. G. Bently, chairman, asserts that while the dangerous practices illustrated might be "old stuff" to employees, their continued toll of life necessitates a re-emphasis.

C. & E. I. to Use Light-Weight Rail Cars

Two new streamlined air-conditioned rail motor coaches, which will give short-run passengers the same modern service as that enjoyed by the passengers on long runs, will be placed in service by the Chicago & Eastern Illinois between Danville, Ill., and Cypress this month to supplement steam locomotive trains. On the 242-mile run between these points, each car will make one run a day under the present schedule. The cars, measuring 74½ ft., were constructed by the American Car & Foundry Company, and are equipped with Hall-Scott model 190 horizontal six-cylinder engines. Rapid acceleration and retardation of speeds are features of the new cars.

Southern Governors Discuss Rate Revision

A conference for the discussion of freight rate differentials was held in Montgomery, Ala., on May 10, by the governors and governors' representatives of nine Southern states—Rivers, of Georgia; Graves, of Alabama; Browning, of Tennessee; and White, of Mississippi; J. W. Wolfe, of South Carolina; Stanley Winborn, of North Carolina; Wade Martin, of Louisiana; and Jere Carter, of Florida.

The group appointed three sub-committees to seek, in a hearing before the Interstate Commerce Commission, revision of class rates, both on commodities moving within the South and those on hauls between the Southern and adjacent districts.

Accountants' Annual Meeting

At the annual meeting of Railway Accounting Officers, division of A.A.R., to be held on June 2-4, at the Hotel Traymore, Atlantic City, N. J., in addition to regular committee reports, there will be addresses at the June 2 sessions by Hon. C. D. White, mayor of Atlantic City; F. J. Fell, Jr., chairman of the meeting; and E. H. Bunnell, vice-president of the A.A.R. At the June 4 sessions, the members will hear talks on "The Importance of Accounting to a Public Utility Commission," by Hon. Harry Bacharach, president of the Board of Public Utility Commissioners of New Jersey; on "Interline Freight Accounting," by T. H. Seay, comptroller, of the Southern; and on "Social Security Unemployment Compensation Problems," by H. J. Walker, auditor of disbursements of the Pennsylvania.

Wheeler Sees No Chance for Pettengill Bill

Senator Wheeler of Montana, chairman of the Senate committee on interstate commerce, stated on May 12 that his committee planned to hold no hearings on the Pettengill bill for repeal of the long-and-short-haul clause of the Interstate Commerce Act, which bill has passed the House of Representatives as it did last session. The Senator stated that he saw little chance of the bill coming up in the present session of the Senate.

As to railway labor's series of "make work" bills Senator Wheeler stated it to be his understanding that railway managements and labor were continuing conferences with a view to working out agreements on the subjects covered in the bills. He added that there has been no demand for hearings on the six-hour day bill.

International C. of C. Discusses Rail Co-operation

The standing committee on rail transport of the International Chamber of Commerce recently met in Paris. The discussions included customs treatment and rates on household furniture containers in international traffic, railway rates on cases containing samples, daylight saving time and international railway timetables, the transportation of baggage in international traffic, the establishment of a uniform railway freight traffic classification, and the establishment of a list of definitions of technical railway tariff terms.

It was strongly urged that efforts should be made to enable the daylight saving season in the future to start and end on the same dates in those countries which have adopted the system (Great Britain, France, Belgium, Netherlands and Luxemburg), and to make the railway timetables coincide with these dates.

New Haven Sponsors "Kayak" Tour

On May 16 and 23, the New Haven will operate so-called "fold-boat" trains from New York to Falls Village, Conn., a distance of 110 miles. From that point, patrons will paddle the boats down the Housatonic for a 19-mile journey through the Housatonic State Forest to Flanders, passing through the rapids at West Cornwall and near the cascade at Kent Falls.

Invented in Europe, where 500,000 are said to be now in use, the "fold-boat" is a small rubberized canvas hull of the kayak type, weighing 35 to 50 lb., decked over, and kept afloat by air-tight flotation tanks. The manufacturers claim that it can be assembled in 10 minutes and permits safe passage through shooting rapids. A 2-bladed spoon-paddle furnishes the means of propulsion.

The special trains will leave New York at 6:45 a.m. (standard time) and return to the city at 8:20 p.m.

New York Assembly Kills Crossing Relief Bill

A New York state bill, presented by Representative Burchill, proposing an amendment to reduce from 50 to 10 per cent the share of railroads in payment for grade crossing eliminations in the proposed schedule of projects, failed to pass the Assembly last week, just before the close of its sessions, after approval by the Senate in a 48 to 1 vote, on May 6. In opposing the measure, the speaker of the Assembly held that an emergency message was required from the Governor, as the bill had not been on the desks of the members for the three-day period required.

Supporting the measure, Assemblyman L. M. Hamilton had previously explained that the railroad companies had been unable to incur the indebtedness necessary for their 50 per cent share of grade crossing eliminations because the state was erecting expensive three-lane structures in the way of bridges and underpasses and that a reduction in the amount of money the railroads should pay was essential for the realization of the grade crossing elimination program. It is reported that the question can be brought up at the constitutional convention of 1938, but it is doubtful to what extent the railroads of the state will be able to give their further support to the 300-million-dollar bond issue now on sale for the crossing projects.

Club Meetings

The Central Railway Club of Buffalo, N. Y., in conjunction with the Transportation Club of Buffalo, will enjoy its annual cruise, aboard the S.S. "See and Bee," on Saturday, June 12.

The Railway Club of Pittsburgh announces its next meeting for May 27, to be held in the Fort Pitt Hotel, Pittsburgh, at which time W. R. Triem, general superintendent of telegraph of the Pennsylvania, will read a paper entitled "Railroad Communication Systems and Practices." The male chorus of the Wierton Steel Company will feature the musical program. A dinner for members and guests will precede the regular meeting.

Members of the Pennsylvania Garden Club of Philadelphia will journey to the Longwood Gardens of the DuPont estate on June 12. The party will leave for Longwood at 2:15 p.m. The annual spring flower show of the New York zone of the club will be held on Tuesday, June 1, in

the Pennsylvania Railroad Y. M. C. A., Pennsylvania station, New York, at which time all employees of the Pennsylvania and Long Island will be eligible to enter exhibits.

The Car Foremen's Association of Chicago devoted its regular monthly meeting on Monday evening, May 10, at the LaSalle hotel, Chicago, to a consideration of problems associated with the operation of tank cars of various types in railway service. The principal address on "Tank Cars—Their Design and Service"—was presented by R. W. Thompson, chief engineer, General American Transportation Corporation, Chicago.

Files Suit Against Pullman, Rock Island and I. C.

Arthur W. Mitchell (colored), a member of the National House of Representatives from Illinois, filed suit for $50,000 damages on May 10 in the circuit court at Chicago against the Pullman Company, the Illinois Central and the Chicago, Rock Island & Pacific, the suit being based on an incident which occurred while Mr. Mitchell was en route from Chicago to Hot Springs, Ark., on April 20. As the train neared Hot Springs, according to the bill, Mr. Mitchell was ordered by the conductor to move out of the Pullman coach into a day coach. The bill charges that the conductor threatened to have Mr. Mitchell arrested unless he acceded to this request. Under the Arkansas law railroads are required to provide equal but separate accommodations for white and colored persons on each passenger train. Failure of a railroad officer to enforce the segregation law is punishable by a fine of $25.

B. & O. Mural Photo Contrasts Old and New

The Baltimore & Ohio has placed a large photographic mural, 35 ft. wide and 16 ft. high, showing old and new train operations over the 102-year-old Thomas Viaduct at Relay, Md., on the entire east interior wall of its new train-connection bus station in Radio City, New York, the opening of which was announced in the *Railway Age* of May 8.

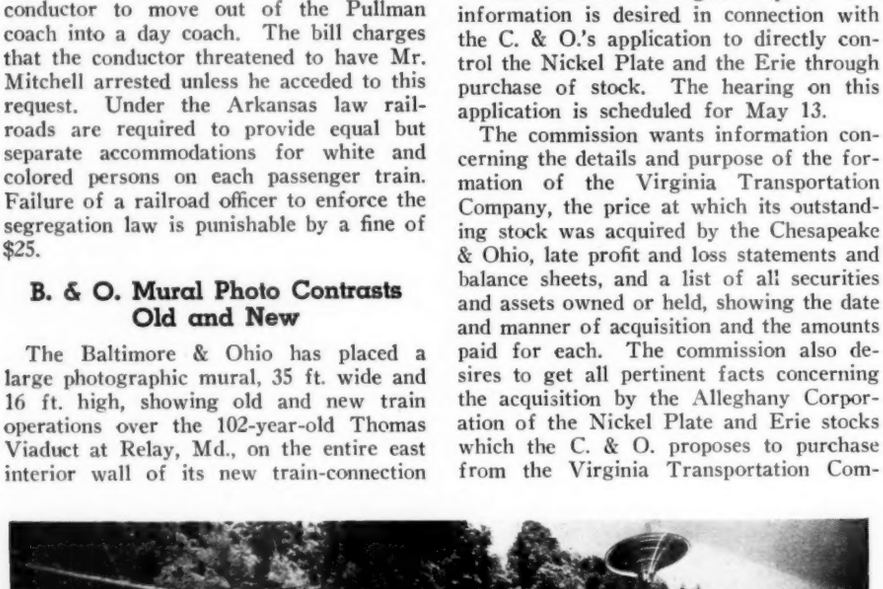
Enlarged from a 20-in. by 12-in. original negative, the mural photo shows at a glance a century of train operation by the road—the train of 100 years ago and that of today. In the right foreground is the grasshopper-type "Atlantic" locomotive of 1832, coupled with two of the "Imlay" double-decked coaches popular on the B. & O. in the eighteen-thirties. In the center ground is the present streamlined Royal Blue regularly on the New York-Washington run. The camera that made the original picture caught both trains on the curve of the old viaduct, which is the oldest for railroad use in the world. Built for 6½ ton trains, with no change in its construction it now carries engines and tenders weighing more than 300 tons.

I.C.C. Requests Data From Chesapeake & Ohio

The Interstate Commerce Commission has requested the Chesapeake & Ohio to furnish it with comprehensive data respecting the Virginia Transportation Corporation and the Alleghany Corporation, two of the principal holding companies in the former Van Sweringen "empire." The information is desired in connection with the C. & O.'s application to directly control the Nickel Plate and the Erie through purchase of stock. The hearing on this application is scheduled for May 13.

The commission wants information concerning the details and purpose of the formation of the Virginia Transportation Company, the price at which its outstanding stock was acquired by the Chesapeake & Ohio, late profit and loss statements and balance sheets, and a list of all securities and assets owned or held, showing the date and manner of acquisition and the amounts paid for each. The commission also desires to get all pertinent facts concerning the acquisition by the Alleghany Corporation of the Nickel Plate and Erie stocks which the C. & O. proposes to purchase from the Virginia Transportation Company. Also, the C. & O. is called upon to state whether, at any time, it has owned stock of the Nickel Plate or Erie, and, if so, what disposition was made of it. The commission also requests details relative to Nickel Plate and Erie securities other than capital stock.

These requests were made in the form of a letter from Finance Director Oliver Sweet to George Gardiner, assistant general attorney for the Chesapeake & Ohio in Washington, D. C.



B. & O. Bus Station Photo-Mural Summarizes the Road's History

Magazine Editors Association Meets at Detroit

"However efficient railway men may have been in some respects, they have not yet been successful in influencing the general public to cultivate the habit of insisting that regulatory policies be based upon facts instead of fancy," said Z. G. Hopkins, special representative of the Western Railways' Committee on Public Relations, in an address delivered at the spring meeting of the American Railway Magazine Editors Association on May 7. This meeting, which was continued on May 8, was held at the Book Cadillac hotel, Detroit, Mich.

Stating that "railroad men are in large part to blame for public failure to learn the facts about railroads," Mr. Hopkins discussed some of the more glaring misconceptions in the public mind concerning the carriers. One of these, he said, is the "popular impression that the railroad industry has been the beneficiary of great government relief bounty through Reconstruction Finance Corporation loans." In refuting this belief he pointed out that the outstanding total of R.F.C. loans to railroads now is equal to less than three per cent of the total property investment of the railroads and that, during the period that the R.F.C. has been loaning money, the railroads as a whole have paid about five times as much in taxes as they now owe the R.F.C.

Another popular misconception, he said, is the belief, which has been repeated until "even some railroad men have come to believe it," that the major difficulties of the railroads are traceable to "watered stock." The charge he answered by pointing to the fact that the total net capitalization of the American railroads is less than 73 per cent of their property investment, and that their total funded or bonded debt amounts to about 45 per cent of their property investment.

"No one," he continued, "can calculate the damage that has resulted to the railroad industry through the popular belief that it is the railroad habit, when unrestrained, to base rates on 'all the traffic will bear.' That is not now, nor was it ever, the railroad practice. In adjusting rates to 'what traffic will bear' railroads simply follow the practice men in every other business pursue in pricing whatever they hope to sell."

Other speakers who addressed the group during the two-day meeting included Fred Thornton, public service department, Detroit News; B. E. Young, manager, railroad section, department of public relations, Association of American Railroads, and W. A. Simonds, Ford Motor Com-

pany. While officers for this group are regularly elected at the fall meeting, which this year will be held at Memphis, Tenn., Martha Moore, St. Louis-San Francisco, was elected first vice-president to fill the vacancy caused by the resignation of D. F. Brittle, Chesapeake & Ohio and Pere Marquette, who asked to be relieved of this position because of ill health.

First Air-Conditioned Cars in Indo-China

The first air-conditioning of passenger cars in French Indo-China is being done by the French Indo-China Government Railways which are installing Carrier systems in 22 sleeping and dining cars for first, second, and third class service. The air-conditioning equipment is being manufactured in the United States and shipped to France where it will be installed in the cars.

Railroads Must Pay Terminal Allowances

Railroads must continue to pay switching allowances to major industries in Louisiana under a decision handed down at New Orleans on April 29 by a three-judge federal court which set aside an order of the Interstate Commerce Commission issued in 1935. The case is based upon a complaint of the Standard Oil Company of Louisiana at Baton Rouge, the Great Southern Lumber Company and the Bogalusa Paper Company, Inc., of Bogalusa, the Pan-American Petroleum Company at Destrahan and the Celotex Corporation at Marrero. On February 24, 1937, the court issued an opinion holding that the orders of the Interstate Commerce Commission should be set aside and that the railroads should continue paying contracted terminal allowances to the industries. The railroads involved are the Texas & New Orleans, the New Orleans Texas & Pacific, the Yazoo & Mississippi Valley, the Gulf, Mobile & Northern, the Louisiana & Arkansas and the Texas & Pacific. The three-judge-court, presided over by Senior U. S. Circuit Judge Rufus E. Foster, held that the I.C.C. was without statutory power to order discontinuance of such payments. It also held that the "spotting" service was one which the railroads were required to perform as transportation and that the railroads involved had entered into contracts with the industries whereby the latter would perform the work in return for which they would receive terminal allowances.

Previous to this Louisiana decision, a three-judge district federal court for Northern Indiana sustained a similar "cease and desist" order of the Commission made in 1931 to require the Indiana Harbor Belt, the Elgin, Joliet & Eastern, the Pennsylvania, and the Baltimore & Ohio to abstain from paying spotting service allowances to the East Chicago Dock Terminal for services within its plant at East Chicago, Ind. In its order, the Commission had held that the transportation service for which the carriers are compensated in their line-haul rates or switching charges begins and ends at the interchange tracks, which were found to be reasonably convenient points for delivery and that the service performed by the terminal company beyond these points is a plant service.

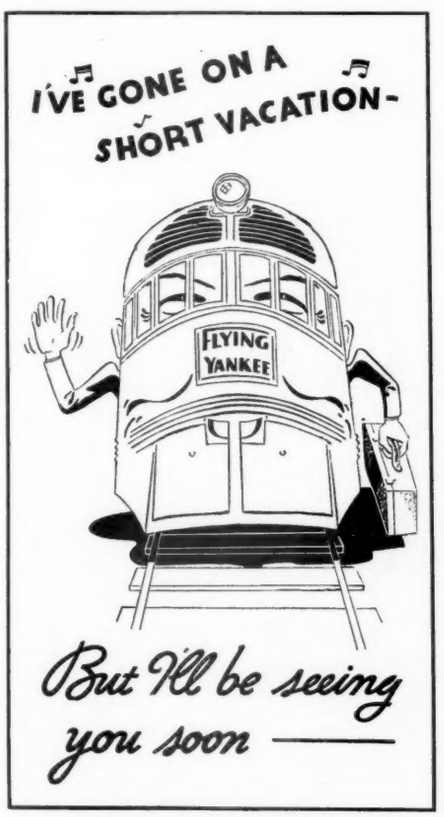
Terminal allowance litigation is now pending in the Supreme Court, on appeal by the Commission from a special district court in western Pennsylvania, which, as did the Louisiana Court cited above, set aside the Commission's order forbidding railroads to pay terminal switching allowances, based on the decision in Part II of its investigation, Ex Parte No. 104.

Belgian System Reports Five Year Deficit

The tenth annual report of the Belgian National Railways (Société Nationale des Chemins de Fer Belges), a semi-private corporation in which the state is the principal shareholder, testifies to unfavorable operating returns for the past five years due to the depression and increased highway competition. According to the report, the company lost 823,000,000 francs ($139,910,000) between 1931 and 1936, which was covered partially by a deduction of 445,000,000 francs from reserves created by law in earlier years, while the remainder of the deficit remains as a debit in the profit and loss account.

"Flying Yankee" on Vacation Sends Letter

In connection with the temporary withdrawal of the "Flying Yankee" from service for general shop work, the Boston &



B. & M. Streamliner Sends Regards

Maine has issued a novel booklet containing a letter purporting to be written by the "Flying Yankee" to its friends. Referring to its second birthday on April 1, the personified streamliner informs the public that a "young fellow who has traveled 418,000 miles in two years is entitled to a short vacation" and confidentially reveals that his holiday headquarters are to be that New England resort, the Concord, N. H., shops of the B. & M.

"He" writes: "This place where I am resting is a resort approved by the Interstate Commerce Commission as a fine place for streamlined trains to rest once a year, while the car-doctors and internes look me over and make sure that my health is up to the Commission's safety standards before I return."

And references to the standard trains that are substituting for the streamliner are not forgotten; the writer makes specific suggestions as to schedules and facilities. Finally, the letter closes with: "I'll be back with you about May 15 and until then, cheerio."

Historical Group Issues Compilation on Diverse Topics

Bulletin No. 43 of the Railway & Locomotive Historical Society, published in April, is a "potpourri" of short papers on diverse subjects. An article by R. R. Brown concerning British and foreign-built locomotives operating in Canada and Newfoundland presents a complete treatment of the history and classification of each locomotive recorded. There follow source-references and a discussion of errors found in previous papers treating the subject partially.

The histories of two narrow-gage lines, the Wiscasset, Waterville & Farmington (now abandoned) and the Nevada County Narrow Gauge, are treated fully, with special reference to equipment lists. A paper on developments in Illinois Central passenger stations on the Chicago lakefront, read by C. J. Corliss before a joint meeting of the Western Society of Engineers and the R. & L. Historical Society, Chicago chapter, is herein reproduced. Description of 10-wheelers on the Delaware, Lackawanna & Western and further information on steam power of the New Haven follow. The table of contents is completed by a history of the 47-mile Delaware & Northern, the last independent steam road to be constructed in New York state.

The editors of the bulletin note that the cover design by E. A. Schefer, a member of the Society, represents a Rogers locomotive running on the old Housatanic road. They announce that in the near future the Society will issue two extra publications—Part II of "Locomotives of the Chicago, Burlington & Quincy R. R., 1855-1904," and a compilation of details concerning construction dates and routes of railroads in Wisconsin.

Inland Waterways Corporation Annual Report

The Inland Waterways Corporation reported for 1936 a consolidated net income of $485,402 and a consolidated net profit of $539,552, according to the annual report made public last week. These results of last year's operations afforded "pleasure and satisfaction" to Major General T. Q. Ashburn, chairman and president, who calls the achievement "under the most unfavorable circumstances" an "indisputable proof

of the success of water transportation." Among the unfavorable circumstances are listed droughts, unusual ice conditions and floods. In 1935 the consolidated net income was $658,902.

To the 1936 net income, the report says, there was added "funds actually collected for depreciation" in the amount of $608,220, so that "the actual funds derived from operations amounted to $1,093,622."

Referring to the Corporation's capital stock account General Ashburn calls attention to the fact that there is still in the U. S. Treasury $3,000,000 earmarked for the purchase of such stock. Since "it is apparent that the Corporation will never need it," he recommends that the $3,000,000 revert to the general funds—"unless it be the intention to further expand our operations" as proposed in bills now before Congress.

Much of the report is devoted to a discussion of the Corporation's labor troubles. Under the heading "Legislation Hampering Freedom of Operations" complaint is made against the inclusion of a reference to the I. W. C. in "practically every bill passed by Congress dealing with economy of expenditure of public funds, sick leaves, annual leaves, etc." Also, against proposals to place the Corporation's employees under civil service, "thus destroying that freedom of action so essential to the success of a transportation agency, which was the primary object of the creation of this Corporation."

The complaint goes on to detail how the application to I. W. C. employees of the 15 per cent wage cut ordered for all government workers caused labor difficulties. The wage-cut order was circumvented, however, by increasing wages to the point where the required 15 per cent deduction left the previous scale undisturbed. The report says in this connection that "the attorney general ruled that we might increase the pay of our employees, but we would still have to deduct 15 per cent of whatever rate of pay might be adopted, which we did." Yet under "the skillful agitation of real and pseudo labor leaders, including Communists," many of the Corporation's employees were misled as to the true nature of these adjustments, and labor troubles continued. At the time of the report's preparation, most of these difficulties had been solved, "for the present, either through arbitration or written agreements."

Reference is made to a sound motion picture of the Corporation's operations, which was presented at Chicago's "Century of Progress" exposition, and more recently exhibited to President Roosevelt. The President suggested that it be given wide distribution, and the film has since been shown in 27 states and 109 cities.

The income account of the Inland Waterways Corporation shows that total operating revenues for 1936 were $6,307,124 as compared with $5,964,764 in 1935; total operating expenses were respectively $5,939,639 and $5,317,477. Its subsidiary Warrior River Terminal Company, which operates a short-line railroad connecting Port of Birmingham, Ala., with Ensley, had operating revenues of $321,845 last year as against $208,418 in 1935.

The tonnage carried on the lower Mississippi increased from 1,317,411 in 1935 to 1,479,825 in 1936; that on the upper Mississippi dropped from 240,215 tons to 150,802 tons; and that on the Chicago division rose from 346,097 to 412,187. Between Port Birmingham, Ala., and New Orleans, La., 250,104 tons were handled last year as compared with 200,283 in 1935.

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Cartoons Sell Railroading to Week-enders

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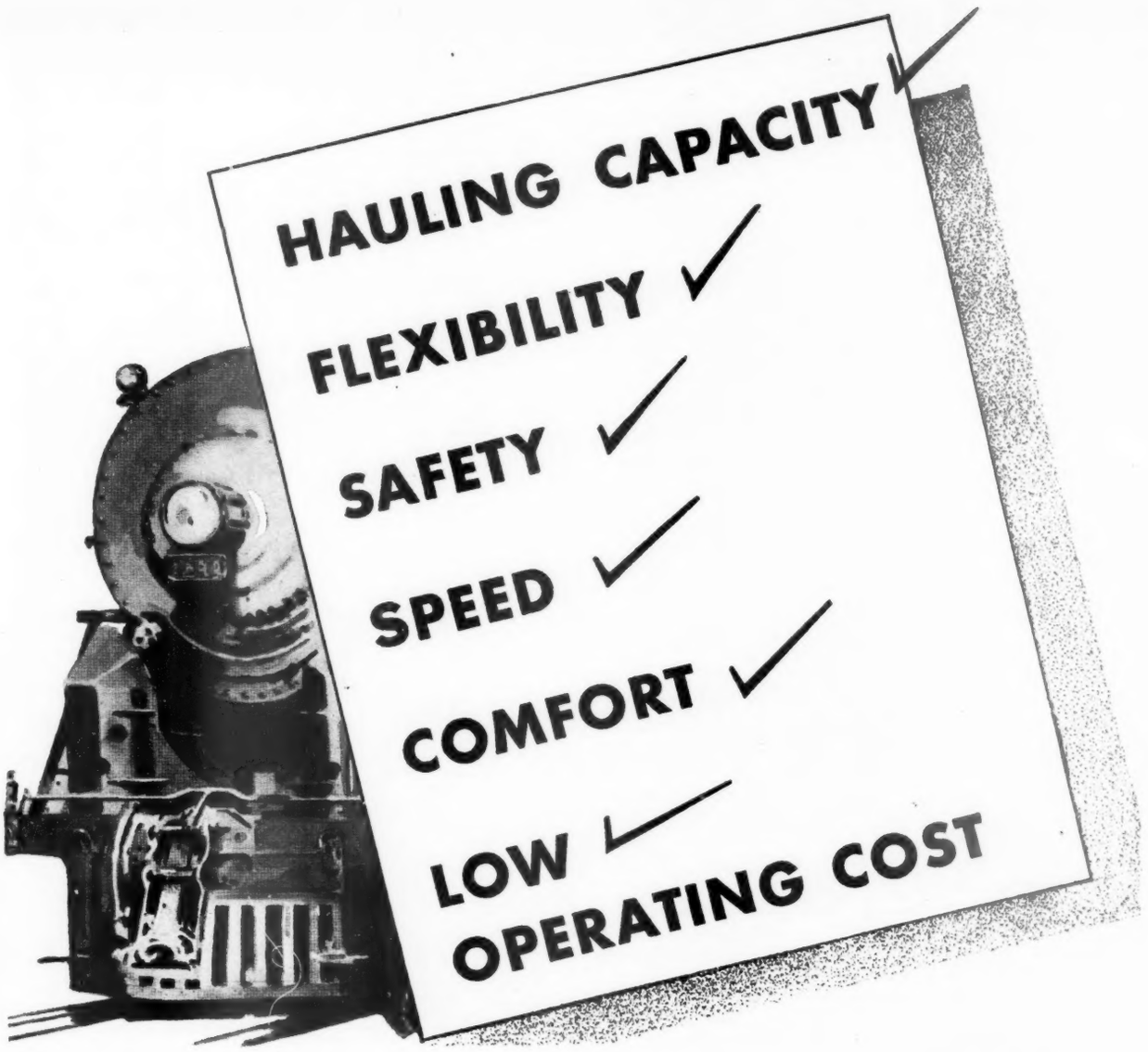

Today steam power alone can meet all these fundamental requirements.

The great advances in the design and building of steam locomotives in the last few years have made this true for all classes of railway service.

LIMA LOCOMOTIVE WORKS INCORPORATED

LIMA OHIO

Supply Trade

Clyde Grigsby has been appointed western manager **Railroad Division** of the **Socony-Vacuum Oil Company, Inc.** Mr. Grigsby will have his headquarters at Chicago.

Joseph T. Ryerson & Son, Inc., has moved its downtown, Chicago, office from the Continental Illinois Bank building to the First National Bank building.

A. J. Woltering, sales manager of the **Trailer Company of America,** Cincinnati, Ohio, has been elected executive vice-president, in charge of all operations, and **C. H. Kinney** succeeds him in charge of sales.

S. E. Gillespie has been appointed director, **Bureau of Railway Signaling Economics,** of the **Union Switch & Signal Company** and the **General Railway Signal Company,** 347 Madison avenue, New York, effective May 1, vice B. T. Anderson, resigned.

S. J. Hall, eastern manager of the **Peerless Equipment Company,** at New York, has resigned to serve as consulting engineer in the electrical field, specializing on design and installation of storage batteries, with headquarters at Chicago, effective May 31.

R. A. Carr, managing director of the Buenos Aires branch handling the South American business of the **Dearborn Chemical Company,** has been elected vice-president with headquarters in Chicago to succeed **C. M. Hoffman,** who is now located in Los Angeles, Cal., where he is engaging in special work for the Dearborn Chemical Company. Mr. Carr

R. A. Carr

was born at Oak Park, Ill., and after graduating from the University of Chicago, in 1926, engaged in advertising work. Later, he entered the employ of the Locomotive Fire Box Company, Chicago, and in 1927 was a member of the dynamometer car staff of the Southern Pacific at San Francisco, Cal. In 1928, he reentered the employ of the Locomotive Fire Box Company, engaging in sales and production work, which position he held until 1934, when he entered the employ of the Dearborn Chemical Company.

OBITUARY

W. R. Gellatly, president of the Superior Railway Products Corporation, Pittsburgh, Pa., died recently in Florida.

P. C. Jacobs, who served as president of the National Railway Appliances Association in 1919-20, died at Hollywood, Cal., on May 10. Mr. Jacobs retired about 10 years ago as a sales representative for the Johns-Manville Corporation at Chicago.

TRADE PUBLICATION

ELASTIC RAIL SPIKE.—The Elastic Rail Spike Corporation, New York, has published a 20-page attractively printed booklet which contains complete information on the elastic rail spike. Illustrated with photographs showing installations of the rail spike, the booklet describes this device in detail, discusses general considerations entering into the installation of the spike in track, and describes various installations.

Equipment and Supplies

FREIGHT CARS

THE UNION PACIFIC has placed orders for 3,800 freight cars; of these 1,900 box and 700 auto box of 50 tons' capacity will be built in its own shops; 1,000 steel Hart selective ballast cars of 50 tons' capacity will be built by the American Car & Foundry Company, and 200 tank cars will be built by the General American Transportation Corporation. The Ryan Car Company has received the order for 2,600 light-weight welded underframes for the 1,900 box cars and 700 automobile cars.

PASSENGER CARS

THE NEW YORK RAPID TRANSIT COMPANY has under consideration the question of purchasing a seven-car light weight articulated train, for service on the Brooklyn Manhattan Transit subway lines.

SIGNALING

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has ordered from the Union Switch & Signal Co. the necessary materials for an all relay type code control interlocking to operate the functions at Tower A-68 from Sturtevant, Wis., which point is 6½ miles distant from the operated units, and includes the control machine, 8 electric switch operating machines, 14 searchlight and electric semaphore signals, relays, rectifiers, etc. Provision is being made for complete traffic locking for reverse running over both main tracks in the 16-mile territory from Lake through Tower A-68 to Sturtevant. The construction work will be carried out by the railroad company's field forces.

Construction

CENTRAL OF NEW JERSEY.—A contract has been given to the P. T. Cox Contracting Company, New York, for the construction of seven bridges at Elizabethport, N. J., to cost about $220,000. A contract has been given to the Pellecchia Construction Company, Newark, N. J., for the construction of central field office building at Elizabethport, N. J., to cost about $6,000. The Standard Bitulithic Company, New York, has been given a contract for the construction of a steel and reinforced concrete bridge No. 204-¼ at Wilson avenue, Newark, to cost about $265,000.

GULF, COLORADO & SANTA FE.—A contract has been awarded to Quisle & Andrews, Fort Worth, Tex., for the construction of a two-story freight house with basement and office building at Fort Worth, to cost $120,000. The new structure, which is 327 ft. by 36 ft. 2 in. in plan, will be of reinforced concrete and brick construction, with stone trim. It will have a concrete roof deck covered with tar and gravel roofing.

LONG ISLAND.—This road has taken bids on work to remove two grade crossings and build a new bridge at Woodhaven boulevard in Glendale, Long Island, N. Y. The work will call for the use of about 310 tons of steel.

LONG ISLAND.—The New York Public Service Commission has ordered the elimination of 11 grade crossings on this road—eight in Freeport, Long Island, N. Y.; one at Milburn avenue in the Town of Hempstead; Grand avenue and the extension of Rockwood avenue in Baldwin. The eliminations are to be accomplished by carrying the tracks over the streets on elevated structures.

NEW YORK, NEW HAVEN & HARTFORD.—This road has authorized the construction of an automatic coaling plant at Springfield, Mass., to cost about $25,000 and also sectionalizing signal power lines from New Haven, Conn., to Springfield, to cost about $32,000. Bids were received May 7 for the reconstruction of Gramatan avenue bridge at Mount Vernon, N. Y., to cost about $47,000. Bids are asked for on May 18 for the elimination of grade crossings at Campbell Hall, Creamery road and Main street, Maybrook, N. Y., to cost about $368,000.

READING COMPANY.—The Pennsylvania Public Service Commission has approved the construction of a bridge, consisting of a 65 ft. single span solid floor, steel through plate girder superstructure, supported on concrete abutments, to carry Clear Spring road over the Lebanon Valley branch of the Reading Company, at a point approximately 8,100 ft. west of Annville station in North Annville Township, Pa. The railroad company was directed to submit plans for the new structure; the cost is estimated at about $36,000.

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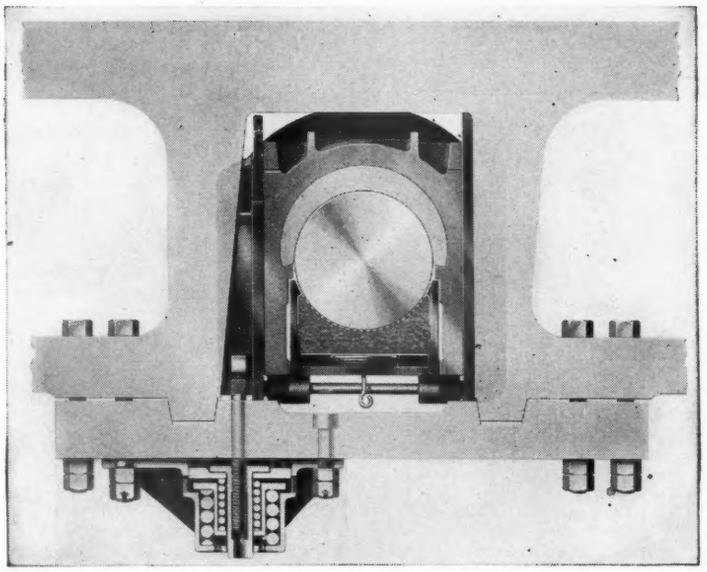
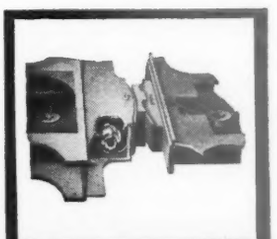


Driving Box Expansion

IS A TOUGH CUSTOMER

Expansion and contraction due to temperature change are tough customers—they can neither be avoided nor subdued. » » » When a locomotive leaves the roundhouse the driving boxes are at atmospheric temperature—expansion must be provided for. » » » The Franklin Automatic Compensator and Snubber provides for this expansion. It maintains accurate driving box fit at all times and the Snubber member provides a cushion to absorb unusual shocks. » » » With the Franklin Automatic Compensator and Snubber every part of the motion work is maintained in correct alignment, wear is reduced and maintenance costs far less. » » » Its twin, the Type E-2 Radial Buffer, maintains correct relationship between engine and tender and together they vastly improve the riding of the locomotive. » » » » » » » » » » » »



Franklin Type E-2 Radial Buffer dampens oscillation between engine and tender and makes for easier riding.

When maintenance is required, a replacement part assumes importance equal to that of the device itself and should be purchased with equal care. Use only genuine Franklin repair parts in Franklin equipment.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

Financial

ANN ARBOR.—*Annual Report.*—The 1936 annual report of this road shows net deficit, after interest and other charges, of $25,492, as compared with net income of $54,001 in 1935. Selected items from the income account follow:

	1936*	1935*	Increase or Decrease
Average Mileage Operated	293.86	293.86	.....
RAILWAY OPERATING REVENUES	$3,962,735	$3,959,274	+$3,460
Maintenance of way	330,914	328,456	+2,458
Maintenance of equipment	877,261	839,577	+37,683
Transportation —Rail	1,677,125	1,595,897	+81,228
TOTAL OPERATING EXPENSES	3,178,958	3,060,301	+118,656
NET REVENUE FROM OPERATIONS	783,776	898,972	−115,196
Railway tax accruals	‡208,743	169,829	+38,914
Railway operating income	575,032	727,319	−152,286
Net rents	146,811	207,005	−60,194
NET RAILWAY OPERATING INCOME	428,221	520,314	−92,092
Non-operating income	16,017	14,013	+2,004
GROSS INCOME	444,238	534,327	−90,088
Rent for leased roads and equipment	35,104	†37,755	−2,651
Interest on funded debt	409,900	410,031	−131
TOTAL FIXED CHARGES	465,733	474,428	−8,695
NET INCOME	(def.) $25,492	$54,001	−$79,494

* Combined Corporate and Receivers' Accounts.
† Restated for comparative purposes from Rent for Floating Equipment account revised I.C.C. classification effective January 1, 1936.
‡ Federal income tax and surtax on undistributed profits not applicable due to failure to earn a taxable net income and the fact that domestic corporations in receivership are not subject to surtax on undistributed profits.

ATCHISON, TOPEKA & SANTA FE.—*Abandonment.*—C. P. Howard, Examiner, in a proposed report to the Interstate Commerce Commission, had recommended that the commission authorize this company to abandon a line extending from Mulvane, Kans., to Viola, 21 miles.

ATLANTA & ST. ANDREWS BAY.—*Securities.*—The Interstate Commerce Commission, Division 4, has modified its order of January 14 so as to permit this company to sell at not less than 95 per cent of par and accrued interest, not exceeding $1,100,000 of first mortgage sinking fund bonds, 5 per cent, series 1966 for the purpose of redeeming certain outstanding bond issues. The commission has also authorized this company to issue and reissue from time to time a promissory note or notes for not exceeding the aggregate amount of $437,750, the note or notes to be dated March 30, and to bear interest at the rate of 5 per cent and to mature not later than 12 months after date.

ATLANTA, BIRMINGHAM & COAST.—*Annual Report.*—The 1936 annual report of this company shows net deficit, after interest and other charges, of $8,965, as compared with net deficit of $75,691 in 1935. Selected items from the income statement follow:

	1936	1935	Increase or Decrease
RAILWAY OPERATING REVENUES	$3,422,306	$3,008,517	+$413,789
TOTAL OPERATING EXPENSES	3,043,757	2,786,622	+257,135
Operating ratio	88.94	92.62	−3.68
NET REVENUE FROM OPERATIONS	378,549	221,894	+156,654
Railway tax accruals	219,889	148,608	+71,280
Railway operating income	158,659	73,285	+85,373
Net rents —Dr.	173,324	156,579	+16,744
NET RAILWAY OPERATING INCOME	14,664*	83,293*	+68,629
Non-operating income	27,516	32,858	−5,342
GROSS INCOME	12,851	50,435*	−63,286
Rent for leased roads	115	50	+65
Interest on funded debt	1,338	1,591	−252
TOTAL FIXED CHARGES	18,270	21,943	−3,673
NET INCOME	$8,965*	$75,691*	+$66,726

* Deficit.

ATLANTIC COAST LINE.—*Annual Report.*—The 1936 annual report of this company shows net income, after interest and other charges, of $1,920,559, as compared with net deficit of $2,524,051 in 1935. Selected items from the income statement follow:

	1936	1935	Increase or Decrease
RAILWAY OPERATING REVENUES	$43,593,212	$39,032,882	+$4,560,330
Maintenance of way	4,647,281	4,677,568	−30,287
Maintenance of equipment	8,490,686	8,233,649	+257,037
Transportation	17,040,411	15,751,475	+1,288,936
Operating ratio	77.47	82.15	−4.68
NET REVENUE FROM OPERATIONS	9,821,423	6,969,207	+2,852,216
Railway tax accruals	4,465,000	3,630,000	+835,000
Railway operating income	5,356,423	3,339,207	+2,017,216
Net Rents	940,669	760,444	+180,225
NET RAILWAY OPERATING INCOME	4,415,753	2,578,762	+1,836,991
Non-operating income	4,832,429	2,444,993	+2,387,436
GROSS INCOME	9,248,183	5,023,755	+4,224,428
Rent for leased roads	86,373	90,425	−4,052
Interest on funded debt	*5,621,607	*5,821,917	−200,310
TOTAL FIXED CHARGES	6,484,505	6,583,583	−99,078
NET INCOME	$1,920,559	$2,524,051 (Def.)	+$4,444,610

* Does not include interest on Company's bonds held in the treasury or pledged.

ARKANSAS VALLEY INTERURBAN.—*Trustees' Salary.*—The Interstate Commerce Commission, Division 4, has ordered that Warren E. Brown and Robert B. Campbell be paid $2,000 and $5,000 a year respectively as trustees of this company.

BANGOR & AROOSTOOK.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to assume liability for $420,000 of 2½ per cent equipment trust certificates to be sold under competitive bidding.

BOSTON & MAINE.—*Motor Line Acquisition.*—Examiner John S. Higgins of the Interstate Commerce Commission has recommended, in a proposed report to the commission, that the Boston & Maine Transportation Company be authorized to purchase the operating rights of the Bee Line, Inc., operating as a common carrier of passengers and freight in New York, Vermont, New Hampshire, Maine, Massachusetts, and Connecticut.

CANADIAN PACIFIC.—*Annual Meeting.*—At the annual meeting of this company in Montreal last week, President Sir Edward Beatty observed that the "foundation for better business conditions in Canada seems to have been laid," with increased employment, higher prices for farm products, and a promising outlook for export markets, but on the soundness of the fiscal policies of the several governing authorities will depend the continuance of that improvement, and Sir Edward said that there is as yet no certainty that the economic waste will be terminated as rapidly and as firmly as the necessities of the case demand.

"Only too often is the suggestion made that the increasing volume of business will itself provide the remedy. There has been some genuine economic improvement and there is reason to hope that there will be more, but it would be unwise to plan our public affairs on the assumption of a continuing advance in business activity. . . . Strong action on the part of all governmental authorities—federal, provincial and municipal—will be required to curb the relief expenditures which are tending to increase despite returning prosperity," he declared.

CHESAPEAKE & OHIO.—*Leave to Intervene Granted.*—The Interstate Commerce Commission, Division 4, has authorized Elmer Nafziger, Receiver of the Chicago, Springfield & St. Louis, to intervene in the case of the acquisition of the New York, Chicago & St. Louis and the Erie by this company.

CHESAPEAKE & OHIO.—*Control of N. K. P. and Erie.*—The Interstate Commerce Commission, Division 4, has granted the Middletown & Unionville permission to intervene in the case of the application of the Chesapeake & Ohio for authority to acquire control of the New York, Chicago & St. Louis and the Erie by purchase of the capital stock.

CHICAGO & NORTH WESTERN.—*Equipment Trust Certificates.*—The Interstate Commerce Commission, Division 4, has authorized the trustee to assume liability for $4,460,000 of 2½ per cent equipment trust certificates, maturing in 10 equal annual installments of $446,000 on April 1 from 1938 to 1947. The issue has been sold at 95.373 to a group composed of

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NO. 15 OF A SERIES OF FAMOUS ARCHES OF THE WORLD

BIG MUDDY BRIDGE

At the time of its construction, 1901-1903, the triple arch concrete bridge of the Illinois Central System over the Big Muddy was the largest all-concrete arch in the world. It is located on the St. Louis Division, north of Carbondale, Illinois. This bridge, built entirely of re-inforced concrete, has a total length of 574 feet 6 inches, made up of three arches, each 140 feet in length. The bridge was designed by Mr. H. W. Parkhurst, then Engineer of Bridges, plans were approved by John F. Wallace, later First Chief Engineer of the Panama Canal. The Contractor was G. H. Schribner, Jr. » » » American Railroad history is a romance of progress by overcoming obstacles. To provide low-cost transportation, fuel economy is an essential. In this the Security Sectional Arch has had a leading part. With modern high capacity, high-speed train operation, The Brick Arch is even more important for maximum fuel economy and full hauling capacity.

* * *

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

Salomon Brothers & Hutzler, Dick & Merle-Smith, and Stroud & Co., Inc., making the average annual cost to the trustee approximately 3.43 per cent.

CHICAGO & EASTERN ILLINOIS.—*Annual Report.*—The 1936 annual report of this company shows net deficit, after interest and other charges, of $335,389, as compared with net deficit of $1,470,247 in 1935. Selected items from the income account follow:

	1936	1935	Increase or Decrease
Average Mileage Operated	931.32	938.26	−6.94
Railway Operating Revenues	$16,109,107	$13,431,903	+$2,677,203
Maintenance of way	1,776,926	1,656,140	+120,785
Maintenance of equipment	2,677,338	2,278,902	+398,436
Transportation—Rail	5,902,609	5,386,162	+516,447
Total Operating Expenses	11,751,140	10,627,132	+1,124,007
Operating ratio	72.94	79.12	−6.18
Net Revenue from Operations	4,357,967	2,804,771	+1,553,195
Railway tax accruals	960,000	640,000	+320,000
Railway operating income	3,397,967	2,160,459	+1,237,507
Equipment rents—Net Dr.	923,332	832,204	+91,127
Joint facility rents—Net Dr.	816,333	705,501	+110,832
Net Railway Operating Income	1,658,301	622,753	+1,035,547
Non-operating income	269,595	180,926	+88,668
Gross Income	1,927,896	803,680	+1,124,216
Rent for leased roads	153,728	154,624	−895
Interest on funded debt	1,582,081	1,626,117	−44,035
Total Deductions from Gross Income	2,263,286	2,273,927	−10,641
Net Deficit	$335,389	$1,470,247	−$1,134,857

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*New Directors.*—At the annual meeting of stockholders, on May 11, it was voted to increase the number of directors from ten to fourteen. The following new directors were elected: Louis M. Atherton, William C. Osborn, Philip J. Roosevelt and Lawrence Howe.

CHICAGO, ROCK ISLAND & PACIFIC.—*Annual Meeting.*—At the annual meeting of this company in Chicago last week Stephen V. R. Crosby of Boston and Clarkson Potter of New York were elected directors.

COLORADO & SOUTHERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon that part of its 46.43 mile branch line known as part of the Clear Creek lines: from Idaho Springs, Colo., to Silver Plume; and has denied this company's application to abandon its lines between Idaho Springs, Colo., and Golden and between Forks Creek, Colo., and Black Hawk.

CHICAGO GREAT WESTERN.—*Annual Report.*—The 1936 annual report of this road and its subsidiary, the Mason City and Ft. Dodge, shows net income, after interest and other charges, of $371,753, as compared with net deficit of $518,251 in 1935. Selected items from the consolidated income statement follow:

	1936	1935	Increase or Decrease
Average Mileage Operated	1,512.10	1,512.79	−.69
Railway Operating Revenues	$18,817,001	$15,607,176	+$3,209,825
Maintenance of way	2,495,222	2,037,721	+457,500
Maintenance of equipment*	2,506,049	2,213,029	+293,020
Transportation	6,953,718	6,098,080	+855,638
Total Operating Expenses	13,217,419	11,591,088	+1,626,331
Operating ratio	70.24	74.27	−4.03
Net Revenue from Operations	5,599,582	4,016,088	+1,583,493
Railway tax accruals†	929,936	598,553	+331,383
Railway operating income	4,669,645	3,417,535	+1,252,110
Net rents	2,471,721	2,110,149	+361,572
Net Railway Operating Income	2,197,923	1,307,386	+890,537
Non-operating income	124,955	125,590	−635
Gross Income	2,322,879	1,432,976	+889,902
Rent for leased roads	177,024	176,999	+24
Interest on funded debt	1,668,932	1,704,437	−35,505
Total Fixed Charges	1,938,746	1,939,984	−1,237
Net Income	$371,753	$518,251	+$890,005
		(Def.)	

* Provision for depreciation of equipment included herein: year 1936, $507,937.88; year 1935, $512,145.20.

† Taxes do not include anything for Federal Surtax on undistributed profits.

COLORADO & SOUTHERN.—*Acquisition.*—The district court at Denver, Colo., has approved a petition of the Denver & Rio Grande Western to acquire the Colorado & Southern's narrow gage branch extending from Gunnison, Colo., to Baldwin. The line was built by the C. & S. more than half a century ago and for a number of years was operated by the Denver & Rio Grande Western. It served mines at Baldwin and several cattle ranches. According to the petition, the C. & S. has agreed to furnish the D. & R. G. W. sufficient rail and equipment to rehabilitate the line without cost.

DELAWARE & HUDSON.—*Annual Meeting.*—The annual meeting of this company was held in New York on May 11, with Vice-President J. T. Loree presiding. Mr. Loree held out some hope of a dividend should dividends be forthcoming from its New York Central stock, with the trend of labor costs also to be a controlling factor.

DENVER & RIO GRANDE WESTERN.—*Annual Report.*—The 1936 annual report of this company shows net deficit, after interest and other charges, of $4,046,440, as compared with net deficit of $3,268,798 in 1935. Selected items from the income account follow:

	1936	1935	Increase or Decrease
Average Mileage Operated	2,582.05	2,592.66	−10.61
Railway Operating Revenues	$25,599,309	$20,936,608	+$4,662,700
Maintenance of way	4,015,100	2,491,669	+1,523,431
Maintenance of equipment	6,503,865	4,861,413	+1,642,452
Transportation	8,800,741	7,140,623	+1,660,118
Total Operating Expenses	20,938,958	16,135,467	+4,803,490
Operating ratio	81.80	77.07	+4.73
Net Revenue from Operations	4,660,350	4,801,141	−140,790
Railway tax accruals	2,247,427	1,784,000	+463,427
Hire of Equipment—Net Dr.	582,641	356,779	+225,861
Joint facility rents—Net Dr.	260,468	242,386	+18,081
Net Railway Operating Income	1,569,814	2,417,974	−848,160
Non-operating income	*2,002,116	324,483	+1,677,633
Available for Interest	(Dr.)432,302	2,093,491	−2,525,794
Interest on funded debt	3,614,137	5,362,290	−1,748,152
Net Deficit	$4,046,440	$3,268,798	+$777,641

* Includes $1,652,190 Interest on Underlying Bonds Matured Unpaid.

DENVER & SALT LAKE.—*Annual Report.*—The 1936 annual report of this company shows net income, after interest and other charges, of $2,454, as compared with net income of $89,826 in 1935. Selected items from the income statement follow:

	1936	1935	Increase or Decrease
Average Mileage Operated	232.29	232.34	−.05
Railway Operating Revenues	$2,856,948	$2,234,876	+$622,072
Maintenance of way	438,258	261,025	+177,232
Maintenance of equipment	711,201	423,915	+287,285
Transportation	721,573	514,719	+206,853
Total Operating Expenses	1,938,668	1,276,681	+661,986
Net Revenue from Operations	918,280	958,195	−39,914
Railway tax accruals	270,548	179,633	+90,914
Hire of Equipment—Net	97,324	36,595	+60,728
Joint facility rents	540,401	518,731	+21,670
Net Railway Operating Income	1,090,810	1,260,698	−169,888
Total Operating and Other Income	1,115,221	1,327,017	−211,795
Rent for leased roads	437,371	417,169	+20,202
Interest on funded debt	664,080	810,000	−145,920
Total Deductions from Gross Income	1,112,767	1,237,191	−124,424
Net Income	$2,454	$89,826	−$87,371

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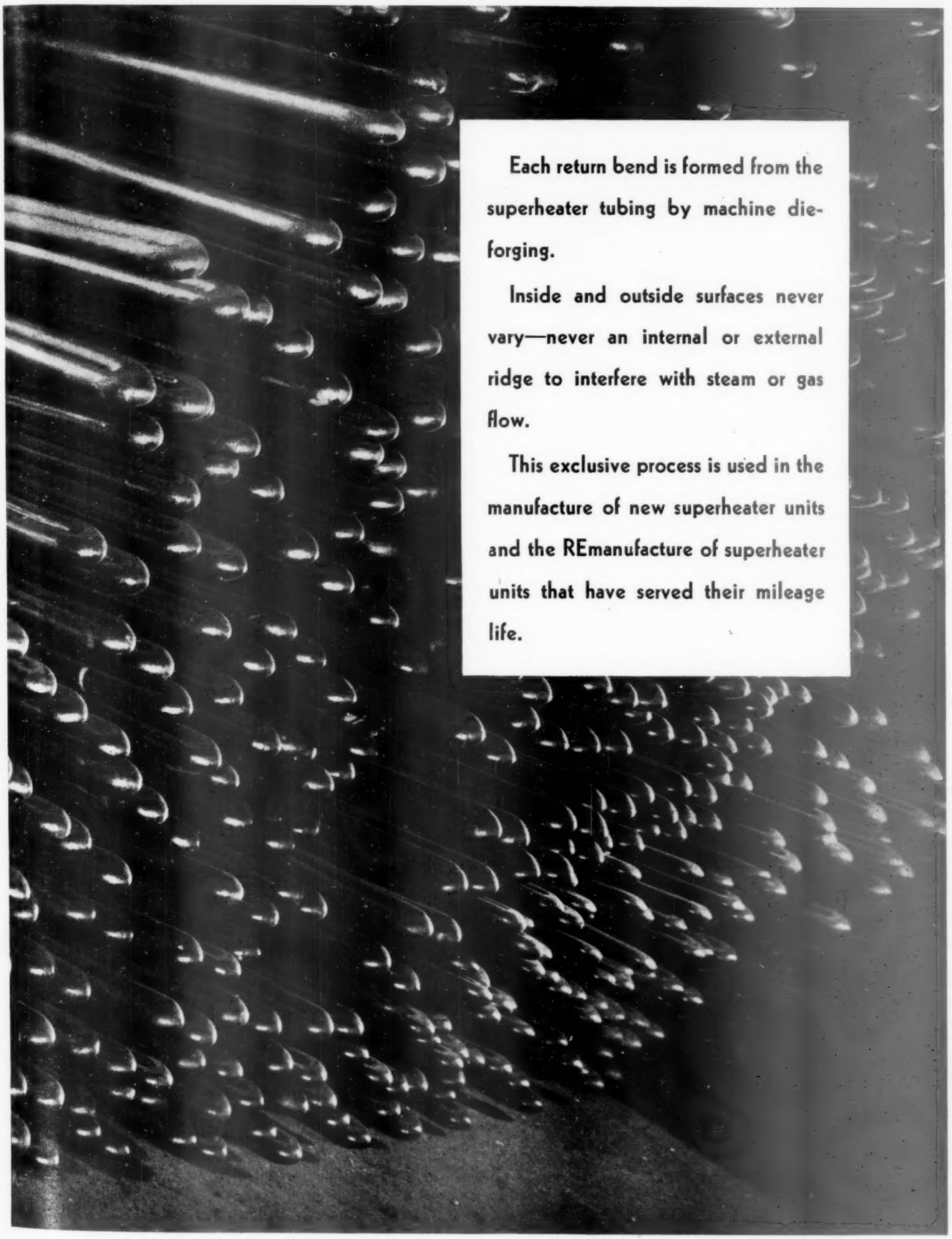

Each return bend is formed from the superheater tubing by machine die-forging.

Inside and outside surfaces never vary—never an internal or external ridge to interfere with steam or gas flow.

This exclusive process is used in the manufacture of new superheater units and the REmanufacture of superheater units that have served their mileage life.

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ILLINOIS CENTRAL.—*R. F. C. Loan.*—The Interstate Commerce Commission, Division 4, has approved a Reconstruction Finance Corporation loan of $10,000,000 to this company for a period ending not later than June 1, 1939.

This company has also applied to the Interstate Commerce Commission for an extension to June 30, 1942, of three outstanding loans from the R.F.C., totaling $17,427,000 due May 31 and June 18.

ILLINOIS CENTRAL.—*Equipment Trust Certificates.*—The Interstate Commerce Commission, Division 4, has authorized this company to assume liability for $7,050,000 of 3 per cent equipment trust certificates, maturing in 30 equal semiannual installments of $235,000 on March 1 and September 1, from September 1, 1937, to March 1, 1952. The issue has been sold at 98.277 to the First Boston Corporation of New York, making the average annual interest cost to the company approximately 3.26 per cent.

JEFFERSON & NORTHWESTERN.—*Stock.*—This road has renewed its application to the Interstate Commerce Commission for authority to issue $20,000 of capital stock. The original application, asking also authority to issue a $60,000 promissory note, was dismissed for want of prosecution.

KANSAS CITY SOUTHERN.—*Directors.*—Stockholders of this company at the annual meeting in Kansas City on May 11 re-elected all directors and decided to enlarge the board by two new directors, to be chosen later.

LOUISIANA & ARKANSAS.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to assume liability for $400,000 of Seria A, 3 per cent equipment trust certificates, maturing in installments of $20,000 on May 15 and November 15 from 1937 to 1947. The company also requests authority to issue $75,000 of series B 3 per cent equipment trust certificates, maturing in installments of $8,000 on May 15, 1938; $7,000 on May 15, 1939, and alternately $8,000 and $7,000 respectively on May 15 each year to and including May 15, 1947.

MERIDIAN & BIGBEE RIVER.—*Reconstruction Finance Loan Extended.*—The Interstate Commerce Commission, Division 4, has approved the extension for one year of a loan of $744,252 to the trustee by the Reconstruction Finance Corporation.

MERIDIAN & BIGBEE RIVER.—*Trustee and Counsel Fees.*—The Interstate Commerce Commission, Division 4, has ordered that W. E. Hopkins be paid $5,000 for reimbursement for expenses incurred as trustee and that J. H. Currie be paid $15,000 for his expenses as counsel to the trustee in the reorganization of this company.

MISSOURI PACIFIC.—*Equipment Trust.*—This company's trustee's issue of $4,260,000 series BB 3½ per cent equipment trust certificates has been awarded to Freeman & Co. at 100.1556.

MINNEAPOLIS & ST. LOUIS.—*Sale.*—For the seventeenth time since September, 1934, the Minneapolis & St. Louis was offered for sale on May 7 at Minneapolis, Minn., by Howard S. Abbott, special master in chancery. Since there were no bidders, the railroad will be offered for sale again in 60 days.

PORT ISABEL & RIO GRANDE VALLEY.—*R.F.C. Loan.*—This company has amended its application for Interstate Commerce Commission approval of a proposed loan from the Reconstruction Finance Corporation so as to reduce the amount sought from $655,056 to $587,118.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—*Annual Report.*—The 1936 annual report of this company shows net income, after interest and other charges, of $51,998 as compared with net deficit of $791,459 in 1935. Selected items from the income account follow:

	1936	1935	Increase or Decrease
Average Mileage Operated	1,150.45	1,173.71	−23.26
RAILWAY OPERATING REVENUES	$14,145,655	$12,303,491	+$1,842,164
Maintenance of way	1,784,805	1,639,943	+144,862
Maintenance of equipment	3,377,899	2,927,649	+450,250
Transportation	5,423,199	5,113,813	+309,386
TOTAL OPERATING EXPENSES	12,085,359	11,120,990	+964,369
Operating ratio	85.44	90.39	−4.95
NET REVENUE FROM OPERATIONS	2,060,295	1,182,501	+877,794
Railway-tax accruals	541,497	455,152	+86,345
Railway operating income	1,518,798	725,317	+793,481
Equipment rents—Dr.	310,032	369,209	+59,177
Joint facility rents	174,075	166,902	+7,173
NET RAILWAY OPERATING INCOME	1,382,841	523,010	+759,831
Non-operating income	227,453	232,294	−4,841
GROSS INCOME	1,610,295	755,305	+854,990
Rent for leased roads	817,481	806,506	+10,975
Interest on funded debt	681,450	687,066	−5,616
TOTAL DEDUCTIONS FROM GROSS INCOME	1,558,296	1,546,765	+11,531
NET INCOME	$51,998	$791,459 (Def.)	+$843,457

NEW YORK CENTRAL.—*Construction.*—This company and the Cleveland, Cincinnati, Chicago & St. Louis have applied to the Interstate Commerce Commission for authority to construct a branch line in Saline and Williamson Counties, Ill., 3.7 miles.

NEW YORK, NEW HAVEN & HARTFORD.—*Abandonment.*—The trustees have applied to the Interstate Commerce Commission for authority to abandon the following lines: from Pascoag, R. I., to Douglas Junction, Mass., 6.85 miles; from York Hill Quarry, Conn., to Westfield, 4.88 miles; and from Slatersville, R. I., to Harrisville, 6.34 miles.

NORTHERN PACIFIC.—*Annual Report.*—The 1936 annual report of this company shows net income, after interest and other charges, of $1,816,783, as compared with net income of $431,782 in 1935. Selected items from the income account follow:

	1936	1935	Increase or Decrease
Average Mileage Operated	6,727.24	6,725.07	+2.17
RAILWAY OPERATING REVENUES	$61,906,306	$53,845,653	+$8,060,652
Maintenance of way	6,783,523	6,181,163	+602,359
Maintenance of equipment	12,498,522	11,991,446	+507,076
Transportation	22,901,124	20,532,072	+2,369,052
TOTAL OPERATING EXPENSES	48,318,404	44,093,599	+4,224,804
Operating ratio	78.05	81.89	−3.84
NET REVENUE FROM OPERATIONS	13,587,901	9,752,053	+3,835,847
Railway tax accruals	6,398,983	5,286,070	+1,112,913
Railway operating income	7,188,917	4,450,367	+2,738,549
Equipment rents—Net Cr.	1,116,417	767,600	+348,817
Joint facility rents—Net Cr.	2,482,852	2,508,373	−25,521
NET RAILWAY OPERATING INCOME	10,788,187	7,726,341	+3,061,845
Non-operating income	5,597,109	7,233,302	−1,636,192
GROSS INCOME	16,385,297	14,959,644	+1,425,652
Rent for leased roads and equipment	50,148	51,255	−1,107
Interest on funded debt	14,256,640	14,231,311	+25,328
TOTAL FIXED CHARGES	14,320,079	14,290,933	+29,145
NET INCOME	$1,816,783	$431,782	+$1,385,001

QUAKERTOWN & BETHLEHEM.—*Abandonment.*—Examiner J. S. Prichard, of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that this company be authorized to abandon its entire line extending from Quakertown, Pa., to Durham, 13 miles.

UNION PACIFIC.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized the Los Angeles & Salt Lake to abandon a part of its line extending from Frisco, Utah, to Newhouse, 6 miles, and has authorized the Union Pacific to abandon operation of this line. The commission has denied the application of these companies to abandon the property and the operation of that part of the line extending from Frisco, Utah, to Milford, 16 miles.

ROCK ISLAND LINES.—*Annual Report.*—The 1936 annual report of the Chicago, Rock Island & Pacific, and its subsidiary companies, shows net deficit, after interest and other charges, of $13,118,589, as compared with a net deficit of $15,024,425 in

(*Continued on page 852*)

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Railway Officers

EXECUTIVE

O. A. Smith, vice-president and general manager of the Pacific Electric (a subsidiary of the Southern Pacific), has been elected president of this company and of the Motor Transit Company (motor transport subsidiary of the Pacific Electric), with headquarters as before at Los Angeles, Cal. Mr. Smith succeeds **David W. Pontius,** who has retired to become chairman of the board in charge of public policy matters. These changes became effective on May 1.

David W. Pontius, president of the Pacific Electric (subsidiary of the Southern Pacific), who has retired to become chairman of the board of directors in charge of public policy matters, as noted in the *Railway Age* of May 8, has been in railway service for about 50 years. He was born at Upper Sandusky, Ohio, in 1869 and obtained his first railway experience at the age of 13 years as a clerk in the office of a track supervisor on the Pennsylvania. Later Mr. Pontius served

David W. Pontius

with the Chicago Great Western, the Northern Pacific, and the Oregon-Washington Railroad & Navigation Company (now part of the Union Pacific), entering the service of the Southern Pacific in 1891. With that company he advanced successively through the positions of telegraph operator, station agent, trainmaster, and district freight and passenger agent, and was appointed traffic manager of the Los Angeles Pacific railway (electrified subsidiary of the Southern Pacific) in 1908. When this company and six others in southern California were consolidated in 1911 to form the Pacific Electric, Mr. Pontius was chosen traffic manager of the new company. In December, 1917, he was appointed general manager of the San Diego & Arizona (also a subsidiary of the Southern Pacific), with headquarters at San Diego, Cal., where he remained until November, 1921, when he returned to the Pacific Electric as vice-president and general manager. On July 3, 1929, he was elected president, which position he held until his recent election as chairman of the board, which was effective on May 1. Mr. Pontius continues as chairman of the board of directors of the Motor Transit Company (motor transport subsidiary of Pacific Electric).

FINANCIAL, LEGAL AND ACCOUNTING

John F. Nash, clerk to the assistant treasurer of the Boston & Maine, has been appointed assistant treasurer, with headquarters at Concord, N. H., succeeding **Fred S. Heath,** deceased.

Ray Webb, general adjuster of the Western lines of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Seattle, Wash., has been appointed general adjuster with jurisdiction over the entire system, with headquarters at Chicago. Mr. Webb's appointment was occasioned by the death on April 8 of **George F. Baker,** general adjuster of the Eastern lines.

Charles A. de L. Harwood, K.C., solicitor of the Canadian National lines in the province of Quebec, has been appointed chief solicitor for the same territory. **J. J. L. Cote,** assistant solicitor, has been appointed solicitor. Charles Augustedde Lotbiniere Harwood, K.C., was born at Vaudreuil, Que., on August 2, 1869, and was educated at St. Laurent College and at Laval and McGill Universities, receiving his B.C.L. degree and being named a King's counsel in 1911. He joined the Grand Trunk as assistant solicitor for its lines in Quebec in 1920 and, after the formation of the Canadian National, was appointed solicitor for the same territory in 1923, which position he has held until his present appointment.

OPERATING

John R. Marra, chief clerk to the president of the Railway Express Agency at New York, has been appointed superintendent of the Buffalo-Erie division, with headquarters at Buffalo, N. Y., succeeding **F. F. LaRowe,** who recently retired after more than half a century in the express service.

T. C. Montgomery, supervisor of wages of the Southern Pacific Lines in Texas and Louisiana, has been promoted to assistant general manager with headquarters, as before, at Houston, Tex. **J. E. Kinsler,** assistant superintendent at Ennis, Tex., has been appointed supervisor of wages at Houston, to replace Mr. Montgomery. **K. P. Chinn,** assistant general storekeeper at Houston, has been appointed assistant superintendent at Ennis, to succeed Mr. Kinsler.

C. E. Hinchman, formerly superintendent of the Indiana Harbor Belt (part of the New York Central System), has been appointed general agent and superintendent of car service of the New York Central with headquarters at Chicago, succeeding **M. F. Barry,** who has been appointed to the newly-created position of fire prevention engineer and safety agent with the same headquarters. Mr. Hinchman, who will also have supervision over the transportation bureau of the New York Central System in the LaSalle Street station, will handle reclaim and demurrage matters for the accounts of the various New York Central units in the Chicago territory.

John Edwards, Jr., who has been appointed superintendent of the Monongah division of the Baltimore & Ohio, with headquarters at Grafton, W. Va., as reported in the *Railway Age* of May 8, was born on December 1, 1889. Mr. Edwards entered the service of the Baltimore & Ohio on July 19, 1912, as a painter in the maintenance of way department at Baltimore, later becoming rodman. In April, 1916, he was appointed transitman and

John Edwards, Jr.

became supervisor maintenance of way at Connellsville, Pa., in October of the same year. On July 1, 1917, Mr. Edwards was promoted to assistant division engineer of the B. & O. at Philadelphia, but two months later was furloughed for military duty. He returned to the railroad on July 1, 1919, as assistant division engineer at Cumberland, Md., being transferred to Pittsburgh in the same capacity on May 1, 1925. He was appointed division engineer of the Monongah division on August 1, 1929, and on July 15, 1936, became assistant superintendent of the Baltimore division at Baltimore, which position he held until his recent promotion to superintendent of the Monongah division.

E. H. Stevens, superintendent of the Railway Express Agency at Wichita, Kan., has been promoted to general superintendent of transportation of the Western departments with headquarters at Chicago, to succeed **J. G. Ruble,** general manager of transportation, who has retired after 52 years' service with this company. **C. I. Fitzgerald,** general agent at Denver, Colo., has been promoted to superintendent of the Washington-Alaska-Yukon division with headquarters at Seattle, Wash., to replace **E. M. Graham,** who has been transferred to the Montana division, with headquarters at Spokane, Wash., where he succeeds **J. C. North,** who has been transferred to Wichita, to succeed Mr. Stevens.

Mr. Stevens was born on September 9, 1873, at Chanute, Kan. He entered rail-

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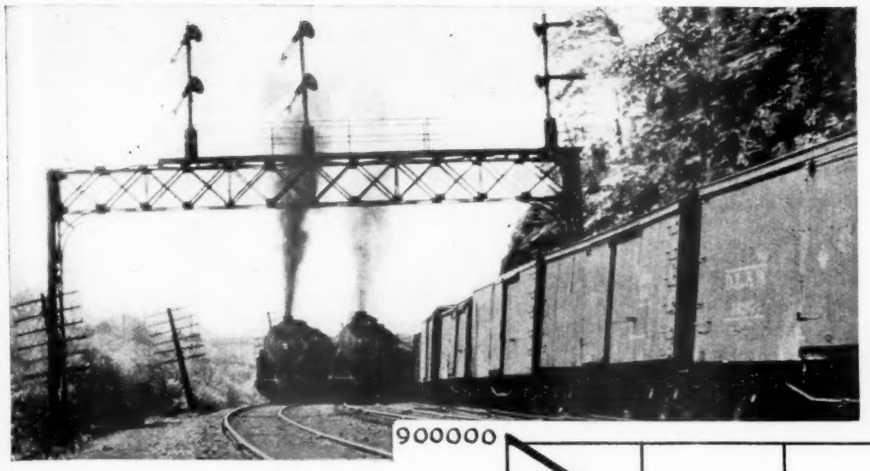
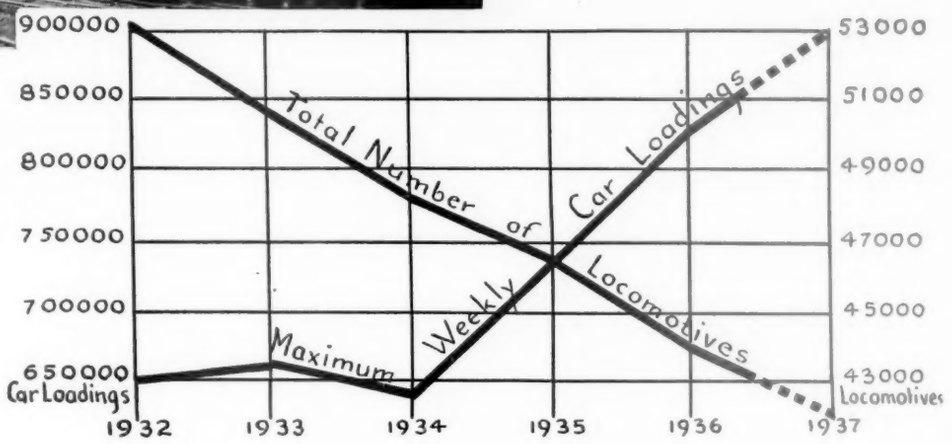


PREPARE *for* HEAVY TRAFFIC

Maximum weekly car loadings have increased from approximately 650,000 in 1932 to an estimated 900,000 in 1937. In the same period the total locomotives in service on Class 1 railroads has decreased from approximately 53,000 to 43,000.



RELIABLE estimates indicate an unusually large amount of passenger traffic and heavy freight car loadings this fall. This increased tonnage will be hauled by a decreasing total number of locomotives which means that each motive power unit must be available the maximum amount of time to get the loads over the road and prevent a car shortage.

Locomotives equipped with HUNT-SPILLER *Air Furnace* GUN IRON in their vital working parts can be relied upon for maximum service with minimum cost of maintenance.

It will pay you to be prepared for the heavy increase in traffic and equip your locomotives with wear resisting H S G I parts. Greater earning capacity and reliable operation will be the net results.

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way express service with Wells, Fargo & Company 45 years ago, and advanced through various positions to that of assistant superintendent at Kansas City, Mo., on May 1, 1907. On July 31, 1911, he was promoted to superintendent with headquarters at Oklahoma City, Okla., holding

E. H. Stevens

this position until June 1, 1913, when he was appointed claim supervisor at Chicago. Four years later Mr. Stevens was appointed assistant to the general superintendent of transportation, and when the various express companies were consolidated in 1918 to form the American Railway Express Company, he was made superintendent of claims at Chicago. He continued to hold this position when the Railway Express Agency was formed in 1929. On January 1, 1935, Mr. Stevens was sent to Wichita as superintendent, where he remained until his recent appointment as general superintendent transportation at Chicago.

TRAFFIC

G. E. Zetzsche, commercial agent for the Chicago & Illinois Midland at St. Louis, Mo., has been appointed to the newly-created position of general agent with the same headquarters.

Samuel J. Cooke, assistant general freight agent of the Chicago, Indianapolis & Louisville with headquarters at Chicago, retired on a pension on May 1, at the age of 80 years.

C. H. Pernter has been appointed chief of divisions bureau of the Norfolk & Western, with headquarters at Roanoke, Va., succeeding **N. R. Lehmann,** who has been appointed commerce agent at Roanoke.

O. M. Sandahl, general agent for the Minneapolis & St. Louis at Boston, Mass., has been promoted to the newly-created position of assistant general freight agent at Minneapolis, Minn. **J. J. Warren,** traveling agent at Cincinnati, Ohio, has been promoted to general agent at Boston, to succeed Mr. Sandahl. **R. G. Malmquist,** assistant general agent at Minneapolis, Minn., has been promoted to general agent at St. Paul, Minn., to succeed **R. W. Nelson,** who has been transferred to New York.

ENGINEERING AND SIGNALING

J. S. Gensheimer, who has been appointed superintendent telegraph and signals of the New York zone of the Pennsylvania at New York, as reported in the *Railway Age* of May 8, was born on March 10, 1882, at Camden, N. J. He entered the service of the West Jersey & Seashore (now Pennsylvania-Reading Seashore Lines) on December 1, 1897, as messenger, then becoming clerk, assistant batteryman, batteryman, signal repairman and assistant signal foreman, successively, for that road. Mr. Gensheimer served as signal inspector and signal foreman, successively, for the Pennsylvania from December 15, 1909, until November 27, 1910, when he was transferred in the latter capacity to the New York terminal. On April 10, 1911, he became assistant inspector of signals in the general office of the Eastern Pennsylvania division of the Pennsylvania; on October 16, 1911, assistant supervisor of signals for the West Jersey & Seashore; and on April 1, 1916, supervisor of signals of the New York,

J. S. Gensheimer

Philadelphia & Norfolk (P. R. R.). On November 1, 1919, Mr. Gensheimer became supervisor of signals of the Maryland division of the Pennsylvania; on May 30, 1920, signal inspector in the general office of the Central region, and on November 1, 1925, chief signal inspector in that office. He was appointed engineer of telegraph and signals in the Central region on January 1, 1927, being transferred in the same capacity to the New York zone in November, 1928, where he remained until his recent appointment.

MECHANICAL

Frank Ross, electrical engineer of the Terminal Railroad Association of St. Louis, who has been promoted to superintendent of motive power and equipment, as reported in the *Railway Age* of May 8, has been identified with this company for more than 14 years. Mr. Ross served his apprenticeship as an electrician with the American Steel Foundries. Upon completing his apprenticeship he became a journeyman electrician, and after holding this position for about six months he was promoted to night chief electrician in charge of electrical and mechanical work. Mr. Ross served in the latter capacity for ten years, during which time he studied electrical and mechanical engineering. After serving in various capacities with other industrial concerns he entered the service of the Terminal Railroad Association of St. Louis in November, 1922, as chief electrician in the Brooklyn shops. On October 1, 1931, he was promoted to electrical engineer in charge of all electrical work, which position he held until his recent promotion to superintendent motive power and equipment, which was effective on May 1. Mr. Ross is continuing to exercise jurisdiction over the electrical department.

PURCHASES AND STORES

P. E. Welch, general foreman at the general store of the Southern Pacific Lines in Texas and Louisiana at Houston, Tex., has been promoted to assistant general storekeeper with the same headquarters, to succeed **K. P. Chinn,** whose appointment as assistant superintendent is noted elsewhere in these columns.

SPECIAL

Dr. Robert S. Yancey, Dallas, Tex., has been appointed chief surgeon for the Missouri-Kansas-Texas Railroad Employees Hospital Association, to succeed **Dr. E. F. Yancey,** Sedalia, Mo., who has been retired.

William Wackher, rules examiner of the Missouri-Kansas-Texas, was appointed superintendent of safety, effective May 1, with headquarters, as before, at Dallas, Tex., to succeed **J. L. Walsh,** who retired on the same date after 41 years' service with the Katy.

Ona W. Campbell, a special representative in the executive department of the Missouri-Kansas-Texas with headquarters at St. Louis, Mo., has been appointed to the newly-created position of supervisor of wage agreements, with headquarters at Dallas, Tex. Mr. Campbell's appointment became effective on May 1.

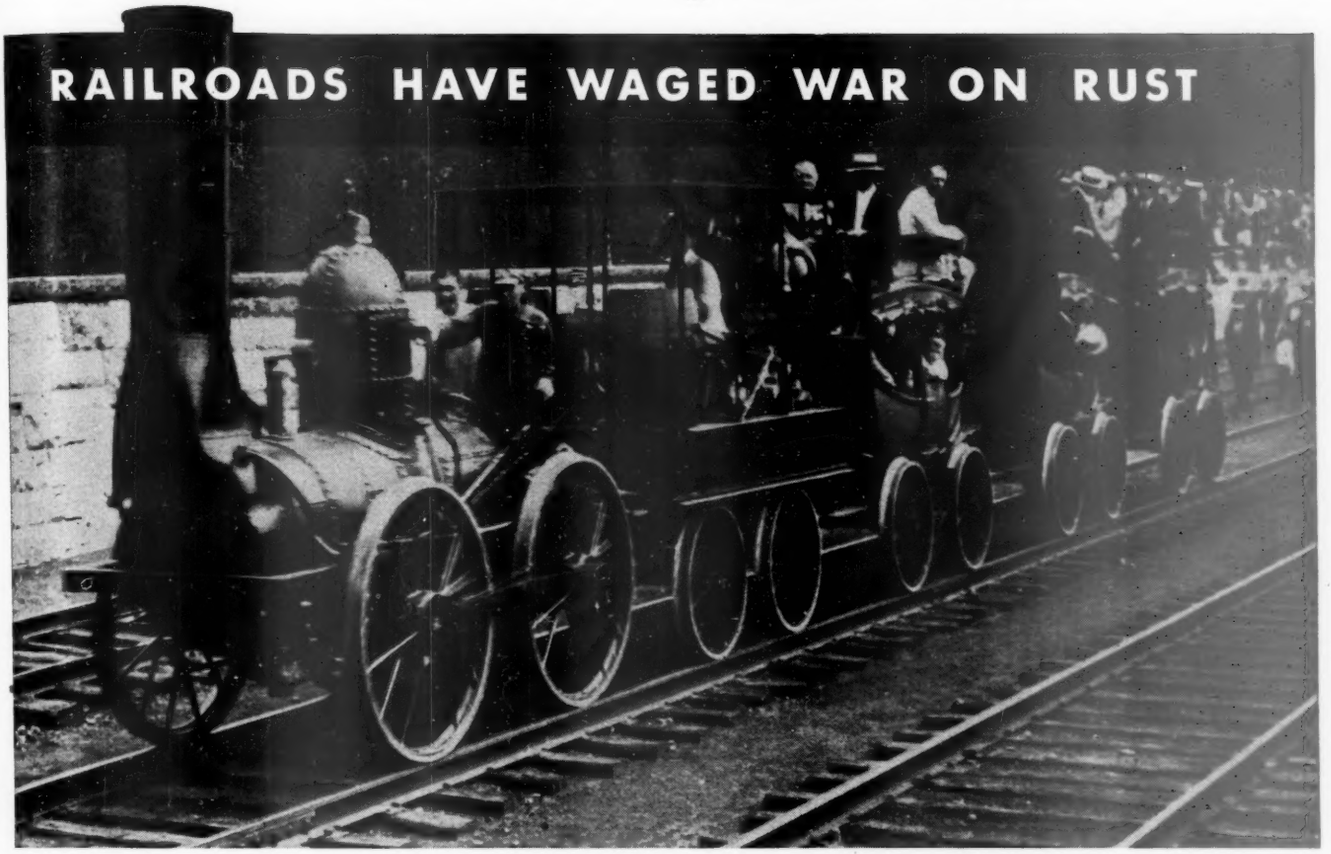
OBITUARY

Edward E. Barthell, vice-president and general counsel for the Kentucky & Tennessee, with headquarters at Chicago, Ill., died at his home in Evanston, Ill., on May 8 at the age of 71.

C. H. Byers, valuation engineer of the Western Pacific with headquarters at San Francisco, Cal., died of a heart attack while on a visit to Los Angeles on May 7. Mr. Byers was 75 years old and was a native of Oskaloosa, Iowa. During the early years of his engineering career, he worked as a location and construction engineer for the Kansas City Southern and later for the Chicago, Milwaukee, St. Paul & Pacific, the latter service being in the Northwest. Subsequently he became assistant manager of the San Francisco district office of the Interstate Commerce Commission. He entered the service of the Western Pacific in October, 1922.

Railroad Annual Report Advertising begins on next left-hand page

Ever since the first IRON HORSE *burned up the track . . .*



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UNITED STATES STEEL

SOUTHERN PACIFIC COMPANY—ANNUAL REPORT

REPORT OF THE BOARD OF DIRECTORS

NEW YORK, N. Y.

TO THE STOCKHOLDERS OF THE SOUTHERN PACIFIC COMPANY:

Your Board of Directors submits this report of the operations and financial affairs of the Southern Pacific Lines and Affiliated Companies for the year ended December 31, 1936.

Consolidated Income Account

The following table shows a condensed consolidated income account for the year 1936, compared with the year 1935, of the Southern Pacific Company, its Transportation System Companies, and its separately operated Solely Controlled Affiliated Companies operating within the United States, excluding offsetting accounts and inter-company dividends. Also, there is appended to this table the income results of separately operated Solely Controlled Affiliated Companies operating within the Republic of Mexico.

	Year Ended December 31, 1936	+Increase −Decrease	Per Cent
Operating revenues	$226,282,612.73	+$44,120,807.27	24.22
Operating expenses	167,316,896.88	+26,448,046.06	18.77
Net revenue from operations	$58,965,715.85	+$17,672,761.21	42.80
Tax accruals	13,935,411.86	+257,071.26	1.88
Equipment and joint facility rents—Net	9,994,461.27	+2,446,713.11	32.42
Net operating income	$35,035,842.72	+$14,968,976.84	74.60
Dividend income	$5,081,874.48	−$3,836,703.41	43.02
Other income items	5,907,346.89	+2,102,570.47	55.26
Total other income	$10,989,221.37	−$1,734,132.94	13.63
Total income	$46,025,064.09	+$13,234,843.90	40.36
Total miscellaneous deductions	$2,148,546.81	+$272,531.93	14.53
Income available for fixed charges	$43,876,517.28	+$12,962,311.97	41.93
Interest on funded debt — Bonds and notes	$30,993,305.15	+$260,750.28	.85
Other fixed charges	1,128,920.41	−292,225.20	20.56
Total fixed charges	$32,122,225.56	−$31,474.92	.10
Net income of Southern Pacific Lines and separately operated Solely Controlled Affiliated Companies operating within the United States	$11,754,291.72	+$12,993,786.89	....
Net deficit of separately operated Solely Controlled Affiliated Companies operating within the Republic of Mexico *(not included in foregoing figures)*	*592,334.41*	+103,590.06	21.20
Net income of all wholly owned companies	$11,161,957.31	+$12,890,196.83	....

Consolidated Balance Sheet

Southern Pacific Company, its Transportation System Companies, and its separately operated Solely Controlled Affiliated Companies operating within the United States, excluding inter-company securities and open account balances. The assets reported below are stated on the basis of classifications prescribed by Federal or State authorities where applicable, and where not, on other classifications following in so far as practicable, the same accounting principles, no attempt being made to adjust to current estimated values.

ASSETS

	December 31, 1936	+Increase −Decrease
Investments		
Property investment	$1,677,595,067.59	−$7,841,331.65
Sinking funds	8,811,574.52	+123,606.12
Investments in affiliated companies:		
(a) Stocks	101,743,974.16	−1,958,077.07
(b) Bonds	164,900.00	.....
(c) Stocks and bonds — Cost inseparable	3,149,451.83	−1,783,225.00
(d) Notes	317,751.05	.....
(e) Advances	4,261,018.53	−595,099.64
Other investments	40,484,666.42	+13,528,378.66
Total investments	$1,836,528,404.10	+$1,474,251.42
Current Assets		
Cash	$27,430,294.01	−$2,504,796.97
Material and supplies	17,416,845.44	+847,598.35
Other current assets	20,006,879.07	+3,233,246.69
Total current assets	$64,854,018.52	+$1,576,048.07
Deferred Assets and Unadjusted Debits		
Deferred assets	$1,479,832.29	−$947,546.25
Discount on securities	13,671,080.14	+1,463,354.06
Other unadjusted debits	32,936,333.77	+23,131,882.39
Total deferred assets and unadjusted debits	$48,087,246.20	+$23,647,690.06
Grand total	$1,949,469,668.82	+$26,697,989.57

LIABILITIES

Stock		
Capital stock held by public:		
(a) Southern Pacific Company	$377,276,305.64	.....
(b) Transportation System Companies	1,400.00	.....
(c) Solely Controlled Affiliated Companies	52,410.00	.....
(d) Total	$377,330,115.64	.....
Premium on capital stock	6,304,845.00	.....
Total stock	$383,634,960.64	.....
Governmental Grants		
Grants in aid of construction	$1,735,682.61	+$340,393.52
Long Term Debt		
Funded debt held by public	$731,964,269.27	+$27,165,280.01
Funded debt held in sinking and other funds:		
(a) By Transportation System Companies	8,120,000.00	+577,000.00
(b) By Solely Controlled Affiliated Companies	285,000.00	−300,000.00
Total funded debt	$740,369,269.27	+$27,442,280.01
Non-negotiable debt to affiliated companies	3,287,498.62	−222,175.35
Total long term debt	$743,656,767.89	+$27,220,104.66
Current Liabilities and Unadjusted Accounts		
Loans and bills payable	.....	−$16,500,000.00
Other current liabilities	$33,304,689.69	+6,008,212.55
Deferred liabilities	645,221.39	−92,431.60
Accrued depreciation	165,564,745.48	+2,675,829.21
Other unadjusted credits	26,164,428.68	+6,859,170.20
Total current liabilities and unadjusted accounts	$225,679,085.24	−$1,049,219.64
Consolidated Adjustment		
Excess of inter-company liabilities over assets eliminated	$143,021,373.36	+$879,692.09
Corporate Surplus		
Appropriated surplus	$35,468,523.79	+$637,097.06
Profit and loss—Balance	416,273,275.29	−1,330,078.14
Total corporate surplus	$451,741,799.08	−$692,981.08
Grand total	$1,949,469,668.82	+$26,697,989.55

Income Account—Southern Pacific Lines

Southern Pacific Lines (Southern Pacific Company and Transportation System Companies, consolidated, excluding offsetting accounts and inter-company dividends).

	Year Ended December 31, 1936	+Increase −Decrease	Per Cent
Operating Income			
Railway operating revenues	$204,338,550.31	+$40,978,940.76	25.00
Railway operating expenses	148,233,849.01	+24,244,702.38	19.55
Net revenue from railway operations	$56,104,701.30	+$16,734,238.38	42.50
Railway tax accruals	$12,092,092.83	+$56,150.91	.47
Equipment rents—Net	9,262,127.67	+1,936,581.22	26.44
Joint facility rents—Net	663,800.69	+488,293.03	278.22

Net railway operating income	$34,086,680.11	+$14,253,213.22	71.86
Other Income			
Revenues from miscellaneous operations	$586,864.41	+$45,533.99	8.41
Income from lease of road and equipment	544,098.87	−99,093.95	15.41
Miscellaneous rent income	1,186,241.68	−19,583.00	1.62
Miscellaneous non-operating physical property	221,110.85	+123,217.10	125.87
Dividend income	$4,751,593.98	−3,969,852.77	45.52
Income from funded securities—Bonds and notes	2,808,753.93	−60,655.36	2.11
Income from funded securities—Investment advances	75,414.46	−1,816.73	2.35
Income from unfunded securities and accounts	80,290.90	+21,063.82	35.56
Income from sinking and other reserve funds	444,756.55	+27,543.46	6.60
Miscellaneous income	2,122,711.58	+2,074,261.92	....
Total other income	$12,821,837.21	−$1,859,381.52	12.67
Total income	$46,908,517.32	+$12,393,831.70	35.91
Miscellaneous Deductions from Income			
Expenses of miscellaneous operations	$566,242.46	+$59,113.53	11.66
Taxes on miscellaneous operating property	16,274.27	+1,851.09	12.83
Miscellaneous rents	681,135.57	−1,401.56	.21
Miscellaneous tax accruals	213,434.61	+131,369.59	160.08
Separately operated properties—Loss	42,316.94	−4,514.76	9.64
Maintenance of investment organization	15,138.77	−1,215.86	7.43
Miscellaneous income charges	293,192.48	+66,796.35	29.50
Total miscellaneous deductions	$1,827,735.10	+$251,998.38	15.99
Income available for fixed charges	$45,080,782.22	+$12,141,833.32	36.86
Fixed Charges			
Rent for leased roads and equipment	$31,802.89	−$45,161.85	58.68
Interest on funded debt—Bonds and notes	29,606,847.42	+319,779.52	1.09
Interest on funded debt—Nonnegotiable debt to affiliated companies	541.87	+75.97	16.31
Interest on unfunded debt	471,546.25	−371,324.14	44.05
Amortization of discount on funded debt	466,713.28	+95,331.81	25.67
Total fixed charges	$30,577,451.71	−$1,298.69	....
Net income	$14,503,330.51	+$12,143,132.01	514.50
Disposition of Net Income			
Income applied to sinking and other reserve funds	$690,599.09	−$255,122.83	26.98
Income balance transferred to credit of profit and loss	$13,812,731.42	+$12,398,254.84	876.53

* Income of Southern Pacific Lines includes interest on bonds of, and rental income from, separately operated Solely Controlled Affiliated Companies, whether earned or not, in order that such income credits will offset income debits reflected in the income accounts of separately operated Solely Controlled Affiliated Companies. Southern Pacific Company, when necessary, makes advances to these debtor companies to enable them to meet interest on funded debt and rental obligations.

§ Dividend income, excludes dividends received from companies included in this statement and, also, from separately operated Solely Controlled Affiliated Companies; dividends from the latter companies being excluded for the reason that the offsetting charges by such companies are made against Profit and Loss and, therefore, would not be offset, in the consolidated statement appearing on above, by the inclusion of the income accounts of such companies.

Total railway operating revenues for 1936 amounted to $204,338,550.31. These were the largest since 1930 and exceeded the revenues for 1935 by $40,978,940.76, or 25.09 per cent. Conditions affecting traffic volume were generally favorable throughout the year, and the increase in operating revenues was the result, principally, of a gain of 31.01 per cent in the net ton-miles of revenue freight carried, and a gain of 21.83 per cent in revenue passenger-miles, of the steam rail lines. The general increase in traffic volume was augmented during the last three months of the year because of interruption of steamship service to and from Pacific ports. Emergency freight rate surcharges authorized by the Interstate Commerce Commission in April, 1935, expired December 31, 1936, having produced approximately $2,570,000 for Southern Pacific Lines during the year, compared with $1,400,000 in 1935. Operating revenues and expenses include credits aggregating approximately $1,900,000 for charges against Pacific Fruit Express Company for services rendered by Southern Pacific Lines; substantially all of this increase, however, was offset by a decrease in non-operating income.

Net railway operating income for the year amounted to $34,086,680.11, an increase of $14,253,213.22, or 71.86 per cent.

Freight revenues increased $33,570,519.99, or 25.97 per cent.

Passenger revenues for 1936 increased $3,788,032.47, or 18.22 per cent, due, principally, to the increase in business and pleasure travel, as a consequence of the improvement in business conditions generally, and, partly, to the attraction of air-conditioned and otherwise improved passenger train equipment, and faster and more frequent schedules. Convention and excursion travel was considerably larger. The Texas Centennial Exposition at Dallas, Texas, which opened June 6, 1936, and closed November 29, 1936, was an important attraction in the Southwest. The California Pacific International Exposition at San Diego, California, was reopened for seven months in 1936, but was less of an attraction for tourists from other states than in 1935; and there was a decrease in movements of Civilian Conservation Corps. Improvements in passenger service, during the year, included the operation, commencing June 14, jointly with Union Pacific System and Chicago and North Western Railway Company, of the light-weight, 11-car, diesel-electric powered, streamliner "City of San Francisco," between San Francisco and Chicago, on a schedule of 39¾ hours. The demand for space on this train, which makes five round trips monthly, has far exceeded its capacity of 170 passengers, and in the early fall of 1937 it will be replaced by a new 17-car streamlined train which will accommodate 228 passengers.

The increase of $929,524.40, or 29.57 per cent, in All Other Transportation revenues was principally due to increased earnings from switching and lighterage, and from Pullman car and parlor car operations; and to inclusion in this account of a portion of the credits, previously mentioned, for charges for services rendered the Pacific Fruit Express Company during the year.

Incidental revenues increased $2,005,674.19, or 50.49 per cent, largely because of inclusion in this account of the principal amount of credits, previously mentioned, for charges against Pacific Fruit Express Company for services rendered by Southern Pacific Lines; and partly due to increased earnings from dining cars, buffet cars, and restaurants; larger demurrage collections, and increased miscellaneous revenues; these increases being partially offset by a decrease in earnings from detouring trains for other carriers, and decreases in rentals and in revenues from storage of freight.

Operating expenses increased $24,244,702.38, or 19.55 per cent, principally due to the larger forces and greater quantities of fuel, materials, and supplies, required because of the increased traffic carried. Payrolls increased approximately $10,900,000 because of larger forces employed, and about $1,050,000 as the result, principally, of the final step taken April 1, 1935, returning employees to the 1931 basis of pay. Cost of fuel for locomotives and steamships increased approximately $5,400,000, slightly more than one-half of this increase being attributable to the large gain in traffic volume.

Funded Debt—Southern Pacific Lines

On June 4, 1936, the Executive Committee of Southern Pacific Company authorized an issue of $60,000,000, par value, of Southern Pacific Company Ten-Year 3¼% Secured Bonds, to provide funds for the purpose of refunding $16,500,000 of outstanding bank loans; $17,000,000 of Reconstruction Finance Corporation loans; $12,000,000 of Ten-Year Secured 4% Serial Bonds issued to the Federal Emergency Administrator of Public Works; and for the further purpose of purchasing from Reconstruction Finance Corporation the note of St. Louis Southwestern Railway Company to Reconstruction Finance Corporation in the principal amount of $17,882,250, secured by $23,903,000 St. Louis Southwestern Railway Company General and Refunding Mortgage 5 per cent Bonds, and $474,000 Southern Illinois and Missouri Bridge Company First Mortgage 4 per cent Bonds. Collection of this note was guaranteed by Southern Pacific Company.

To provide for the construction and acquisition of new rolling stock, an equipment trust, known as "Southern Pacific Company Equipment Trust, Series N," was created, and an issue of $9,150,000 par value, of Two and One-Quarter Per Cent Equipment Trust Certificates authorized, all of which were issued during the year.

The net increase during the year in funded debt of Southern Pacific Company and Transportation System Companies *held by the public* amounted to $27,899,466.37 This increase is a result of paying off the bank loans and the purchase of the note of the St. Louis Southwestern Railway Company, hereinbefore referred to.

New Rolling Equipment

In order to take care properly of traffic offered, your Company, in June, 1936, made arrangements to add to its owned equipment by purchase from outside builders and by construction at Company shops, of 12 articulated consolidation locomotives 4-8-8-2 type, 6 streamlined locomotives 4-8-4 type, 1,750 box cars, 750 box-automobile cars, 200 flat cars, 100 gondola cars tight-bottom, 20 baggage-horse cars, 24 streamlined light-weight passenger cars, 150 stock cars, estimated cost of which is $12,500,000.

Pacific Fruit Express Company (owned one-half by your Company and one-half by Union Pacific Railroad Company) faced with conditions with respect to its ownership of refrigerator cars similar to the conditions mentioned herein relative to your Company's rolling stock, purchased 2,700 new refrigerator cars during the year, at a cost of approximately $10,300,000. All of these cars were delivered during the months August to November, inclusive, 1936.

Including the Southern Pacific Company's one-half of the Pacific Fruit Express equipment, the total estimated cost of the rolling stock mentioned amounted to $17,700,000.

Equipped with new streamlined steam locomotives and new light-weight, streamlined passenger cars, two 12-car "Daylight" trains were placed in service on March 21, 1937, on the Coast Line between San Francisco and Los Angeles, on schedules of 9¾ hours. The equipment of these new trains is of the most modern type. The locomotives were designed for a maximum speed of 90 miles an hour. The cars were constructed of Corten steel and light-weight stainless steel, with aluminum used extensively in the interior, and equipped with electro-pneumatic type high-speed brakes. Each train includes one baggage-coach with 44 seats, one 48-seat coach, six 50-seat coaches in three articulated units, tavern car with coffee shop, bar, and 18-seat settee section, diner seating 40 persons, one 29-chair parlor car, and a parlor-observation car with 38 chairs; all cars air-conditioned and, except the diner, equipped for radio reception.

To secure the advantage of current prices for new rolling stock included in your Company's 1937 equipment program, orders were placed late in December, 1936, and early in January, 1937, for 28 locomotives, 10 large capacity locomotive tenders, 41 light-weight, streamlined passenger cars, 2,375 freight cars, and 3 units of work equipment; and arrangements were made to build in Company shops 350 new freight train cars, and to rebuild 400 freight train cars and 439 company service cars from vacated equipment and second-hand materials. The estimated cost of this new and rebuilt rolling stock is approximately $15,800,000.

The Pacific Fruit Express Company also placed orders for 2,000 new refrigerator cars for delivery in 1937, and has arranged for reconstruction of 2,750 owned cars, at an estimated cost for the total of 4,750 cars of approximately $12,300,000.

Including your Company's half of new equipment ordered by Pacific Fruit Express Company, expenditures for new rolling stock for 1937 mentioned herein will be about $21,900,000.

Passenger Cars Air-Conditioned and Modernized

The program of air-conditioning of passenger cars, mentioned in last year's report, was continued during 1936 by the installation of such equipment in 119 owned cars, making a total of 257 cars of your Company's ownership which have been equipped for air-conditioning over a period of five years. The Pullman Company installed air-conditioning facilities in 105 of its cars in service on Southern Pacific Lines, during the year, making a total of 306 air-conditioned Pullman cars of various types in service on these Lines at the end of the year. The program of air-conditioning and modernization of your Company's passenger cars will be continued in 1937, and the Pullman Company will equip for air-conditioning an additional number of its cars in service on your Lines.

Automobile Cars Equipped with Loading Devices

Continuing the program mentioned in previous reports, devices for loading and unloading motor vehicles in automobile cars were installed by your Company in 218 cars, and such devices were installed by the car builders in 750 new cars purchased during 1936, making a total of 2,017 cars provided with loading devices at the end of the year. The ability to supply such equipment has materially aided your Company in increasing the tonnage of motor vehicles carried.

St. Louis Southwestern Railway Company

St. Louis Southwestern Railway Company on December 7, 1936, filed a plan of reorganization with the Interstate Commerce Commission and in the District Court of the United States at St. Louis, Missouri, pursuant to the provisions of Section 77 of Chapter VIII of the Acts of Congress relating to Bankruptcy. Consideration of the proposed plan is now in progress before the Interstate Commerce Commission. Southern Pacific Company owns 87.37 per cent. of the outstanding capital stock of the St. Louis Southwestern, and is also a creditor of that Company as the holder of its promissory note in the principal amount of $17,882,250. The note was originally issued to Reconstruction Finance Corporation, and its collection was guaranteed by Southern Pacific Company. On July 13, 1936, Southern Pacific Company purchased the note from Reconstruction Finance Corporation and came into possession of the $24,377,000, principal amount, of bonds which are pledged to secure its payment. The amount paid for this note is included in the amounts reported against Other Unadjusted Debits in the balance sheet above.

Pacific Greyhound Corporation and Southwestern Greyhound Lines, Inc.

Pacific Greyhound Corporation, and its solely controlled subsidiaries which operate the principal motor bus lines on the Pacific Coast south of Portland, Oregon, and in the territory west of Salt Lake City, Utah; Albuquerque, New Mexico; and El Paso, Texas; had net income, after all charges, of $1,651,098.69, a decrease of $63,369.93, or 3.70 per cent, compared with 1935. Motor coaches, operated over an average of 8,906 route miles during the year, carried 6,478,863 passengers. Gross revenues were $8,142,057.91; operating expenses, $4,780,203.88; taxes $1,249,768.44; and depreciation and retirement, $481,712.64. At the close of the year, under authority of the Interstate Commerce Commission and state regulatory bodies, all the assets of Pacific Greyhound Corporation and Pacific Greyhound Lines, Inc., and its inactive subsidiaries, through transfers and a merger were vested in a surviving corporation which was renamed Pacific Greyhound Lines. Southwestern Greyhound Lines, Inc., in which your Company and St. Louis Southwestern Railway Company each owns one-sixth of the voting stock and together own 11.3 per cent of other outstanding capital stock, had net income of $740,346.06 after all charges, an increase of $129,778.11, or 21.26 per cent, compared with 1935. Serving territory between Albuquerque, New Mexico, and El Paso, Texas, on the west; and St. Louis, Missouri, and Memphis, Tennessee, on the east; motor coaches of the Southwestern Greyhound Lines, Inc., operated over an average of 5,683 route miles during 1936 and carried 2,412,665 passengers. Gross revenues amounted to $4,630,367.84; operating expenses were $3,087,829.34; taxes, $585,839.94; and depreciation and retirements, $253,383.56.

Southern Pacific Golden Gate Ferries

Southern Pacific Golden Gate Company, a holding company in which your Company owns slightly over fifty per cent of the outstanding stocks, and its solely controlled Southern Pacific Golden Gate Ferries, Ltd., which operates vehicular ferries on San Francisco Bay, had a consolidated net loss for 1936 of $388,261.32 after depreciation and obsolescence charges, compared with a net loss of $431,702.12 for 1935. Before such charges there was consolidated net income of $2,197,280.05, an increase of $67,877.45, or 3.19 per cent, compared with 1935. At the close of the year the reserve for accrued depreciation and obsolescence equaled the investment in floating equipment and other property of the operating company, except lands, and the outstanding funded debt, originally $10,000,000, had been reduced to $1,964,500, par value, of bonds. Revenues for the year amounted to $5,263,927.96, an increase of $239,480.26, or 4.77 per cent, compared with 1935. There has been a substantial decrease in traffic and revenues of routes serving East Bay territory, however, since the San Francisco-Oakland Bay Bridge was opened for motor vehicle traffic on November 12, 1936, from which date the ferry company's tariff rates on such routes, that were higher than bridge tolls, have been on the same scale as the bridge tolls. On March 1, 1937, similar rates were made effective on the ferry company's Sausalito routes which soon will be in competition with the Golden Gate Bridge. The ferry company filed with the California Railroad Commission a proposed tariff further reducing its rates on East Bay routes to afford an appropriate differential below tolls of the San Francisco-Oakland bridge, to offset to some extent the time-saving advantage of the bridge. It also offered to sell its East Bay lines to the California Toll Bridge Authority and consideration of this matter has delayed the effort to obtain differential competitive rates, final action not yet having been determined. The ferry company will make every effort to compete successfully with the bridges, but, owing to many unknown and uncertain factors involved, the financial results cannot now be predicted.

General Traffic Conditions

General Conditions

Business in the territory served by Southern Pacific Lines showed continued improvement during 1936. Farm income as a whole was larger. The revival of private construction activities

continued at an accelerated pace. Permits issued for building construction in 23 of the principal cities along your Company's Lines totaled $188,395,700, an increase of approximately 77 per cent, over 1935. Several large public construction projects were completed during the year, these including the San Francisco-Oakland Bay Bridge, the power transmission line from Boulder Dam to the Los Angeles area, and the Bonneville Dam. Other such projects under construction were substantially progressed, providing considerable employment for forces engaged in this work, and business for industries and transportation companies which furnish and transport the construction materials.

Industrial

A total of 816 industries secured locations and 326 industries discontinued operations at locations on Southern Pacific Lines during the year. A number of the industries which left the rails were contractors and produce shippers whose operations were of a temporary or seasonal nature. Large expenditures for new facilities were made during the year by major industries located in 1935 and 1936, and by industries which expanded plant facilities this year. A number of the new industries occupied structures which had been vacant or little used for several years, and many constructed warehouses, small manufacturing plants, and vegetable packing sheds adjacent to and served by your Company's rails.

General

Under the pension system of your Company, put in effect January 1, 1903, there were carried on the pension rolls at the end of the year 2,854 retired employes. The payments to pensioners for the year amounted to $1,864,881.19.

Litigation is pending in the United States Court of Appeals for the District of Columbia to determine the constitutionality of Federal legislation enacted in 1935 providing for retirement annuities for rail workers. In the meantime, by agreement between the railroads and their employes, proposals have been submitted to Congress which, if enacted into legislation, would reduce the amounts to be paid by the railroads and the employes, compared with payments which would be imposed under the present legislation if found constitutional.

The Board acknowledges its appreciation of the continued loyalty and efficient services of officers and employes.

By order of the Board of Directors,

HALE HOLDEN,
Chairman.

News (Financial)

(*Continued from page 846*)

1935. Selected items from the income account follow:

	1936	1935	Increase or Decrease
RAILWAY OPERATING REVENUES	$78,066,706	$67,116,854	+$10,949,852
Maintenance of way	11,084,437	8,325,661	+2,758,776
Maintenance of equipment*	12,526,159	10,548,164	+1,977,994
Transportation	32,058,560	29,291,315	+2,767,244
TOTAL OPERATING EXPENSES	67,401,772	59,830,489	+7,571,282
Operating ratio	86.34	89.14	–2.80
NET REVENUE FROM OPERATIONS	10,664,933	7,286,364	+3,378,569
Railway tax accruals	5,611,294	4,160,000	+1,451,294
Railway operating income	5,053,639	3,096,740	+1,956,898
Equipment rents—Dr.	2,921,861	2,924,879	–3,018
Joint facility rents—Dr.	1,131,096	1,111,059	+20,037
NET RAILWAY OPERATING INCOME	1,000,681	†939,197	+1,939,878
Non-operating income	576,699	545,733	+30,965
GROSS INCOME	1,577,380	†393,463	+1,970,844
Rent for leased roads	155,386	155,286	+100
BALANCE BEFORE DEDUCTION FOR INTEREST	1,304,385	†605,181	+1,909,566
Total Interest	14,422,975	14,419,244	+3,731
NET INCOME (Deficit)	$13,118,589	$15,024,425	+$1,905,835

* Excluding depreciation and retirements.
† Deficit.

ST. LOUIS-SAN FRANCISCO.—*New Directors.*—At the annual meeting of stockholders, at St. Louis, Mo., on May 11, new directors were elected as follows: George N. Aldridge, Dallas, Tex.; Daniel Bartlett, St. Louis; Col. Henry T. Blair, New York; Lewis W. Healy, Scranton, Pa.; George T. Lee, Wilkes-Barre, Pa.; Dick Oliver, St. Louis; W. F. Pendleton, Dallas, Tex., and Alvin D. Strandberg, New York. Directors who were re-elected included Fred R. Angevine, New York; E. N. Brown, New York; Alvin C. Carpenter, St. Louis; Jesse McDonald, St. Louis; C. W. Nichols, New York; Paul H. Nitze, New York; Theodore G. Smith, New York; Clayton Snyder, New York, and H. P. Wright, Kansas City, Mo.

UNION PACIFIC STAGES.—*Motor Carrier Acquisition Denied.*—The Interstate Commerce Commission, Division 5, has denied the application of this company for authority to purchase the Burns Stage Line which operates over 170 route miles in Washington and Idaho. A competing operator protested that the granting of the application would "break the independent chain" and make competition more difficult. The report holds that the greater part of the Burns routes is already served also by Union Pacific Stages buses, and thus the Motor Carrier Act's aim is achieved with respect to the latter's parent railroad—the Union Pacific—which "is able to use service by motor vehicles to public advantage in its operations;" and the commission finds no convincing evidence that the granting of the application would change or improve the railroad's situation.

WISCONSIN CENTRAL.—*Equipment Trust Certificates.*—The receiver has applied to the Interstate Commerce Commission for authority to assume liability for two series of equipment trust certificates in amounts of $2,500,000 and $1,200,000. The former, series B, carrying a dividend rate of 3½ per cent, would be dated January 1, 1937, and would be payable semi-annually over a 10-year period; their proceeds would be used to finance the acquisition of certain equipment from the Minneapolis, St. Paul & Sault Ste. Marie. The $1,200,000 issue (series C) carrying a dividend rate of 4 per cent would finance the purchase of locomotives and freight cars. They would be dated June 1, 1937, payable semi-annually over a 10-year period.

WHEELING & LAKE ERIE.—*Annual Report.*—The annual report of this company for 1936 shows net income, after interest and other charges, of $3,744,278, as compared with net income of $2,162,113 in 1935. Selected items from the income account follow:

	1936	1935	Increase or Decrease
Average Mileage Operated	512.57	511.60	+.97
RAILWAY OPERATING REVENUES	$15,574,200	$13,497,874	+$2,076,326
Maintenance of way	2,007,995	1,788,198	+219,797
Maintenance of equipment	3,555,271	3,484,189	+71,082
Transportation—Rail	4,509,369	3,925,694	+583,675
TOTAL OPERATING EXPENSES	10,892,349	9,901,688	+990,661
Operating ratio	69.94	73.36	–3.42
NET REVENUE FROM OPERATIONS	4,681,850	3,596,186	+1,085,664
Railway-tax accruals	1,562,033	976,416	+585,617
Railway operating income	3,119,816	2,619,346	+500,470
Net Rents—Cr.	631,815	51,227	+580,588
NET RAILWAY OPERATING INCOME	3,751,632	2,670,573	+1,081,059
Non-operating income	643,906	147,842	+496,064
GROSS INCOME	4,395,539	2,818,416	+1,577,123
Interest on funded debt	607,069	637,300	–30,300
TOTAL FIXED CHARGES	638,808	643,417	–4,609
NET INCOME	$3,744,278	$2,162,113	+$1,582,165

Average Prices of Stocks and Bonds

	May 11	Last week	Last year
Average price of 20 representative railway stocks..	56.73	57.46	44.90
Average price of 20 representative railway bonds..	80.85	81.19	78.52

Dividends Declared

Bangor & Aroostook.—Common, 62c, quarterly; Preferred, $1.25, quarterly, both payable July 1 to holders of record May 28.

Cincinnati, New Orleans & Texas Pacific.—Preferred, $1.25, quarterly, payable June 1 to holders of record May 15.

North Pennsylvania.—$1.00, quarterly, payable May 25 to holders of record May 17.